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A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

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Manufacturers' Record.

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THE ST. LOUIS EXPOSITION.

The Manufacturers' Record is represented at the exposition by Mr. Albert Phenix, its Southwestern representative, with office in the Missouri Trust Building.

Mr. T. G. Bush, president of the Alabama Consolidated Coal & Coke Co., Birmingham, Ala., writing under date of August 13 and referring to the report in a recent issue of the Manufacturers' Record about the meeting of the Cotton Planters' Convention held in Florida in 1851, in which the scheme for establishing cotton warehouses throughout the South was suggested, says:

Probably it will be a matter of interest to you to know that a gentleman who is a near neighbor of mine was at the Florida convention in 1851 when the matter of establishing cotton warehouses was seriously discussed. He states that the lack of money was the reason it was never carried into effect.

ALABAMA MINERALS.

"Index to the Mineral Resources of Alabama" is the modest title of a valuable publication just issued by the geological survey of Alabama. It has been prepared by State Geologist Eugene A. Smith and his chief assistant, Henry McCalley, and with its map and half-tone illustrations is intended rather to direct the attention of persons interested in the various natural resources of the State that are regarded capable of profitable utilization and to the sources of more detailed information than to be a complete and adequate treatment of the subject. In considerable detail, however, are discussed the occurrence and working of the iron ores, coal, the stone for fluxing, marbles, clays for the pottery and the cement resources which must have a great development when the construction of the Panama canal is fully under way. Gold, copper ore and pyrite, graphite, mica, corundum, asbestos, soapstone, lead ore, mineral paints, copperas, alum, epsom salts, niter, phosphates, building stones, sands, road material, asphaltum, petroleum and natural gas are also given some mention as having promise

of handling to profitable account. The publication is presented in condensed and handy style, and will the more on that account be effective in creating a more lively interest than ever before in the underground wealth of Alabama still awaiting the touch of money-and-muscle capital.

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 58 and 59.

IMPORTANCE OF SOUTHERN PORTS.

Analysis by the Manufacturers' Record of official figures of the country's export trade during the past two fiscal years brings out several striking facts about the steady growth of trade at Southern ports and the increasing weight of the South in the country's commerce. In the first place, of the several groups of customs districts of the country the Gulf ports alone showed an increase in the value of exports in the fiscal year 1904 over those of 1903; in the second place, the increase in the value of exports of cotton and its products was \$47,000,000, or \$7,000,000 greater than the increase in the value of all exports; in the third place, the value of exports originating in the South, directly or indirectly, about \$590,000,000, constituted 40 per cent. of the value of all exports, and its increase was nearly equal the total increase over 1903.

The value of all exports increased between 1903 and 1904 from \$1,420,141,679 to \$1,460,868,185, equal to \$40,726,506, or 2.8 per cent. The value increased from \$306,422,527 to \$358,882,156, equal to \$52,459,629, or 17.1 per cent., at the Gulf ports. The decreases were from \$201,814,737 to \$200,360,342, equal to \$1,454,395, or .6 per cent., at South Atlantic ports; from \$702,357,243 to \$696,764,461, equal to \$5,592,782, or .7 per cent., at North Atlantic ports, and from \$209,547,172 to \$204,861,226, equal to \$4,685,946, or 2.2 per cent., at all others. The changes at the several Southern ports are shown in the following table:

Ports.	1903.	1904.
Baltimore.....	\$81,704,497	\$82,836,164
Beaufort.....	181,794	131,391
Brunswick.....	8,595,199	8,676,414
Charleston.....	4,620,930	2,230,675
Fernandina.....	3,092,315	7,361,135
Georgetown, S. C.....	17,083	23,750
Newport News.....	25,508,391	16,712,454
Norfolk.....	8,757,499	9,041,794
Richmond.....	2,385	8,427
St. Johns.....	227,098	381,935
Savannah.....	54,140,882	53,770,832
Wilmington.....	14,966,754	19,085,221
Apalachicola.....	251,228	206,706
Galveston.....	104,121,087	145,316,457
Key West.....	631,616	696,367
Mobile.....	12,621,278	16,884,611
New Orleans.....	149,072,519	148,595,103
Pearl River.....	2,549,633	4,056,280
Pensacola.....	13,745,544	15,897,541
St. Marks.....	381,551	1,211,016
Tampa.....	1,639,302	1,930,569
Teche.....	7,284
Brazos de Santiago.....	197,219	265,318
Corpus Christi.....	7,973,755	8,626,772
Paso del Norte.....	8,188,426	9,742,091
Saluria.....	5,042,083	5,453,326
Total.....	\$508,237,264	\$559,242,498
All ports.....	\$1,420,141,679	\$1,460,868,185

Of the 90 ports from which merchandise was exported in 1903 or 1904, 44

showed decreases in the value of exports, 20 of them being North Atlantic ports, four of them South Atlantic ports, three of them Gulf ports and 17 of them other ports. Of the 46 showing increases, 19 were Southern ports. It is interesting to note that the increases at Baltimore and Boston closely approached each other, being something more than \$1,000,000 each; that the increase at New York was but \$978,319, and that the decrease at Philadelphia was within \$170,000 of the decrease at Charleston, and that the greatest increase in the country, \$41,195,370, was at Galveston, Texas. New York led, of course, in the value of its exports, \$506,808,013, with New Orleans second, \$148,595,103; Galveston third, \$145,316,457; Boston fourth, \$89,845,772; Baltimore fifth, \$82,836,164; Philadelphia sixth, \$71,411,934, and Savannah seventh, \$53,770,382, no other port showing the value of exports more than \$35,000,000.

Of the 1904 exports, those exclusively from the South were: Cotton, \$370,810,246; cottonseed oil, \$10,717,280; cottonseed meal, \$9,134,088; coal, \$17,722,515; naval stores, \$16,145,222, and phosphate, \$6,517,396—a total of \$431,046,747. The South's share in exports produced in other parts of the country as well as in the South may be estimated at follows: Tobacco, \$29,000,000; lumber in various forms, \$28,000,000; petroleum, \$26,000,000; grain, \$24,000,000; provisions, \$17,000,000; cattle, \$14,000,000; cotton goods, \$9,000,000; fruits, \$3,000,000—a total of \$150,000,000. To these totals must be added the direct and indirect proportion of the South's share in the exports of iron and steel products, of manufactures of wood and of leather and its products, estimated at \$9,000,000, making the total weight of the South in exports \$590,000,000, or \$40,000,000 more than its share last year.

MISSISSIPPI OPPORTUNITIES.

The August issue of the Southern Field, the organ of the land and industrial department of the Southern Railway and the Mobile & Ohio Railroad, is devoted especially to the State of Mississippi. There is probably no other State of its size offering greater opportunities for homeseekers; manufacturers and investors, in spite of the wonderful progress in farming and manufacturing that has been made during the past few years. The State has a total land area of 29,657,600 acres, and of these, 18,240,736 were farm acreage in 1900, with only 7,594,428 improved, while nearly all of the 11,000,000 acres in timber or wild will make when cleared productive farms, as has been demonstrated where the general farmer or truck grower has followed closely the trail of the lumbermen. Prices of land are, as a rule, remarkably low, ranging from \$8 or \$10 to \$25 where cultivated, and from \$3 to \$15 where virgin timber stands. The soils produce bountifully not only cotton, but corn, wheat, oats, sugar-cane, potatoes,

hemp, alfalfa and other grasses, peaches, pears and plums, while at a number of places great success has been had in raising small fruit and truck for the early markets. Woodworking factories and cotton mills are increasing in number, and mineral resources are waiting the touch of capital. The main need at present is the means for making known these opportunities, a need that the Mississippi Business Men's League, recently organized, is endeavoring to meet, and which such publications as the August edition of the Southern Field will tend to diminish.

RAILROAD-BUILDING IN THE SOUTH.

Several important pieces of construction which are now nearing completion emphasize the progress of railroad-building in the South. These lines, which have been under way for periods of from one to two years, will all be of great value to the transportation systems with which they are connected. They will make a total of 1378 miles when finished.

The most important of these new roads with respect to its particular section of the country is probably the Birmingham extension of the Seaboard Air Line, which is 168 miles long from Atlanta, Ga., to Birmingham, Ala. Most of the grading on this route has been finished, and attention is now being particularly directed towards putting through several tunnels on the road. Nevertheless, it is expected that the line will be completed and ready for operation by the end of this calendar year. The great importance of this road lies in the fact that its completion will mark the entrance of another trunk-line system into the Birmingham district to participate in the great freight traffic originating there.

The Memphis, Helena & Louisiana Railway of the Missouri Pacific system, which is to furnish a connection along the west bank of the Mississippi river between Memphis and New Orleans, is another important road which will soon be entirely finished. Much of it is already built and in service, and the entire length of construction necessary to make this line will have been 233 miles. This is the new Gould line which the Frisco system is also to use on its way to New Orleans, having made traffic arrangements therefor until such time as it may desire to build its own through route from Memphis to the Crescent City. The Missouri Pacific also has on hand and has nearly completed the White River extension, which is 195 miles long from Newport, Ark., northwest to Carthage, Mo. The completion of this road, like that of the Seaboard extension to Birmingham, is delayed by the building of several tunnels, yet the work has now so far progressed that, according to report, the whole line may be in operation this year.

Turning back to the eastern section of the country, the Knoxville, Lafollette & Jellico Railroad of the Louisville & Nashville system is found to be not far

from completion. Already it has been put in operation for freight service between Jellico and Lafollette, Tenn., and soon the entire 79 miles to Knoxville will be in use. The importance of this route is increased by the fact that it will form part of a through line for the Louisville & Nashville (in connection with the Atlanta, Knoxville & Northern, also of that system) from Cincinnati to Atlanta. To make ready for this new route the Louisville & Nashville has made extensive purchases of land immediately outside of Atlanta to secure an independent entrance to that city, and it is also said has bought rights of way in the vicinity of Cartersville, Ga., with the purpose of making a shorter and better road to cover a portion of the distance traversed by the Atlanta, Knoxville & Northern.

In the State of Mississippi the Mobile, Jackson & Kansas City Railroad is making rapid progress on the construction of its line northward to Pontotoc. It has already built 190 miles of new line, and has purchased the Gulf & Chicago road, 63 miles long, running northward from Pontotoc, Miss., to Middleton, Tenn., which latter line is to be converted to a standard-gauge and made part of the main road. About 143 miles of new construction are yet to be done, which will cover the gaps between Newton and Pontotoc in Mississippi and from Middleton to Bolivar in Tennessee, so that the entire line when finished will have about 400 miles of track. Recent reports are to the effect that the Frisco has become interested in this property, and will use it to secure a Gulf terminal at Mobile.

In the Indian Territory the Midland Valley Railroad, which now has 127 miles of line extending from Muskogee, I. T., to Hoyer, Ark., is pushing northwest on the extension of 58 miles from Muskogee to Tulsa. A large part of this line runs through a coal field lying partly in Arkansas and partly in the Indian Territory. It is said that the company will now build a branch into Fort Smith, Ark., and also that when the extension to Tulsa is finished another extension will be made from there to Wichita, Kan.

Farther southward in the Indian Territory the Missouri, Kansas & Texas Railway is building the Texas & Oklahoma road, which will be 118 miles long from Coalgate, I. T., via Ada and Shawnee to Oklahoma City, O. T. This will give a valuable cross-country connection from the Missouri, Kansas & Texas line, that now terminates at Oklahoma City via Coalgate, to a connection at Atoka with the main line, which extends from Parsons, Kan., down into the State of Texas.

All the mileage here described will soon be finished, but there are one or two other pieces of work under way to which reference should also be made. One of these is the line of the Norfolk & Western Railway from Naugatuck to Kenova, W. Va. This may also be completed soon, and while it does not make exactly a new road for the system, it will form a much better route for an existing division. Another great work is the Big Sandy extension of the Chesapeake & Ohio Railway that is being built from Whitehouse, Ky., to Elkhorn City, Ky., 77 miles. This runs through difficult country and progress is slow, so that the date of its completion is by no means certain. The Western Maryland Railroad (Wabash system) gives more definite information concerning the probable completion of its line between Cherry Run and Cumberland, Md., which is to be finished, ac-

cording to contract, by next summer. The tidewater extension at Baltimore is nearly done and will doubtless be continued next month, but the necessity for this road will not be great until the Cherry Run and Cumberland division is opened, when, under the plans of the company, practically the entire coal traffic of the West Virginia Central will be hauled down over the Western Maryland to tidewater at Baltimore.

The work that is being done by the New Orleans Terminal Co. at New Orleans, and also that of the Louisiana Railway & Navigation Co., which is building an extension from Baton Rouge to New Orleans, must not be overlooked, both of them being exceedingly important. The Terminal Company has made considerable progress on its line in New Orleans, and when completed it will be used jointly by the Southern Railway and the Frisco system. The other line mentioned, the president of which is William Edens, has obtained ground for terminals in New Orleans, and will build upon it when the city is reached by its line.

All the construction here mentioned, which, by the way, is but a portion of that which is going on in the South, albeit the most important thereof, has been pushed during the period of financial depression of the last year, and this fact is ample evidence of its importance even if the connections to be made and the great centers to be reached did not speak for themselves as to the magnitude of the different undertakings. There are also some other large pieces of construction about to be undertaken of which mention has been made in the Manufacturers' Record.

AN INTERNATIONAL COTTON MEETING.

The coming of a large body of British iron and steel manufacturers to the United States this fall, and the previous international meetings of these manufacturers, suggest a query as to why there has never been any manifestation of such a fraternal feeling among the cotton manufacturers of the United States and Great Britain. The old idea that a factory should be closed tightly to all but its proprietors and employees passed away long ago, and a liberal policy towards all visitors is now the rule throughout the United States, with a few exceptions in some industries. There is less dependence upon trade secrets than upon skillful business management, and it has come to be a generally-recognized principle that an interchange of ideas among competitors is always helpful and never harmful.

At the semiannual gatherings of the iron and steel manufacturers keen competitors in business have the utmost freedom in examining each other's plants, and this rule prevails in many other branches of manufacture. The manager of one of the largest factories of its kind in the United States, a company that has maintained almost a monopoly in its line for many years, and has always been known for its progressive methods of production, once remarked: "I always enjoy showing a competitor through my factory, for it is rarely that I do not get some idea from his comments that is worth fully as much to me as any ideas he may carry away with him."

The cotton manufacturers of the United States and Great Britain are competitors of the keenest kind, but this fact should not be a bar to the interchange of ideas in a joint meeting.

If the cotton manufacturers of the South and New England should jointly arrange for a visit to this country by a large body of British millowners and managers, it would be an international event of the greatest importance. If the visitors should be given opportunity to inspect some of the best New England mills and also some of the largest operations in the South, it would probably be productive of valuable results for all concerned.

In the South, too, the visitors would have an opportunity to see, as few of them ever have seen, how their great staple is raised and marketed. Such an insight into the superior resources of the South as a region for cotton manufacture would be a revelation indeed to visitors from abroad, and should be of material benefit to that section.

With the St. Louis Exposition as the great attraction to draw so many people from abroad, this year is the time of all others to arrange for such an international meeting of cotton manufacturers, and if promptly taken in hand no doubt it could be carried through successfully.

ITALIANS IN BRAZIL.

Those who foresee great benefit to the South in the encouragement of Italian immigration and colonization may find an interesting and instructive example of similar character in the experience of Brazil with the Italian as a colonist and agricultural worker. The conditions under which this problem has been worked out in Brazil with such satisfactory results have been quite similar in many respects to the conditions which have been met and still exist in the South.

Brazil undertook to abolish slavery in 1871 by the enactment of a law which gave freedom to children of slave parents and provided for the gradual liberation of slaves then living. The result of this policy was a demoralization of the agricultural industries of the country, owing to the impossibility of getting the required labor from the liberated slaves, who quickly demonstrated their irresponsibility and disinclination to work. The demands of then existing industries and the desire to stimulate the development of the country's resources necessitated the provision of a supply of labor to supplant and supplement the liberated slaves.

Immigration was inadequate to the demands of the situation, and the government undertook to induce a large influx of settlers by assisting immigrants. Of all the nations that furnished settlers under this plan, Italy responded most liberally and most satisfactorily, and the Italian immigrants quickly outnumbered all others. They also proved to be by far the most desirable settlers and agricultural workers, owing as much to the climatic conditions in Brazil as to any other cause.

The result of this large immigration of Italians is most conspicuous in the enormous development of the coffee industry in the State of Sao Paulo, which now yields about three-fourths of the entire coffee crop of the world, and at a low cost of production that is not approached in any other country. Without the labor of Italian immigrants, Brazil probably never would have reached such a commanding position in the coffee trade. In a lesser degree, too, other agricultural interests in Brazil have benefited by Italian labor, and the cotton and sugar crops give promise of reaching great importance.

The influence of the Italian population in Brazil is shown strikingly by

the large commercial interests in the hands of Italian merchants, the existence of Italian banks and the operation of several lines of steamships between Italian and Brazilian ports. The Italian population of Brazil is peculiar in its transitory character, as there is a large homeward movement of Italians after the close of the coffee season, and a corresponding return before the opening of the next season. Conditions of life in Brazil are not comparable with the conditions in the Southern States, and such a migration would probably never become a feature of Italian colonization in the South.

In the Argentine Republic the influence of Italian immigration has also been shown, but not in such a marked manner as in Brazil, and in several other South American republics the Italians have figured largely as settlers and agriculturists. Wherever the Italians have settled in South America, their employment in agricultural pursuits has been as marked as their labor on public works and their occupation as small traders has been in the United States.

INVENTIVE INSTINCTS SOUTH.

Four patents have been issued to South Carolinians this month. One invention is a cotton-picking machine of the suction variety, one a lightning arrester, one an automatic switch for trolley roads, and the fourth a steam-railroad device. It has been claimed that patents are an index to the industrial life of a people. As applied to the case of the South this is hardly correct. Up to the time that the invention of the cotton gin gave such a tremendous impetus to cotton-growing, and, consequently, diverted so much Southern energy into agriculture, no part of the United States could claim pre-eminence in mechanical ability. But for two generations, during the time in which invention connected directly or indirectly with the cotton-manufacturing industry did so much in changing manufacturing methods from hand to machine, the natural instincts of the South lay dormant, though the history of harvesting machines, sewing machines and other revolutionizing inventions cannot be written without giving due weight to the part played by Southerners. The passing of slavery and the demoralization of the South's labor system compelled a revival of its inventive instincts in a number of inventions connected with the handling of cotton, to take the place of a lack of human labor or to overcome its growing incapacity, though not necessarily recorded in the Patent Office. In that was the opposite of a tendency to patent every idea, whether practical or not—a tendency which weakens the value of the record of patents as an unquestionable gauge of industrial progress. Be that as it may, it is undoubted that the South has resumed its place in industry, though still laboring under many difficulties of readjustment, and the number of inventions that it will produce may be expected to increase steadily. For one of those inventions civilization is waiting. It is the mechanical cotton-picker commercially practical. The man who invents that machine in its perfection will bring about the revolution second only in importance—if, indeed, second—to that wrought by the invention of the cotton gin, and he will rightly win the title of one of humanity's greatest benefactors.

The News and Observer of Raleigh, N. C., has just celebrated its tenth anniversary under its present manage-

ment, and starts upon the second decade of that management with a clean balance-sheet. At one time its indebtedness was two-thirds as large as its capital, but the last dollar of debt has been paid. For that credit and congratulations are due Josephus Daniels, its editor and president.

The Louisiana State Commission is circulating at the St. Louis Exposition a most attractive brochure entitled "Louisiana's Invitation," containing condensed statements regarding the resources, possibilities and advantages of Louisiana in general, with details of conditions in every parish in the State. With this publication, which is handsomely illustrated, are issued a folder map of the Louisiana State Board of Agriculture and Immigration, and a list of 6,000,000 acres of lands for sale, arranged by parishes. The three publications ought to be effective in accelerating the gratifying movement already under way of men and money to Louisiana.

Edward M. Stephens, representative at 642 West Franklin street, Baltimore, Md., of the New York Glass Co., writes to the Manufacturers' Record as follows:

We find the reports of building operations as published in the Manufacturers' Record of great value to us, both as to reliability and completeness.

For Attention of Southern Brick-makers.

A well-known business enterprise located in the North is desirous of corresponding with Southern brick manufacturers who are prepared to accept orders for special bricks. The company requires that the manufacturer with whom it shall complete arrangements is to have available pure clays, free from lime and lime, and have auger or plunger machinery for producing the bricks continuously, and be equipped with proper kilns so that the bricks can be well and evenly burned. The submitting of samples and all other details can be arranged by correspondence. Southern brickmakers who are interested in this are advised to address "Special Bricks," care of the Manufacturers' Record, and their replies will be forwarded promptly.

Wants to Test Cotton-Baling Machine

Hugh S. Morrison of Richmond, Va., writes the Manufacturers' Record that he is desirous of securing space in a ginnery somewhere in the South so that he can test a new cotton-baling machine. Mr. Morrison is a mechanical engineer, and is in charge of designing and building the new machine. He prefers the use of one side of a ginnery having two presses and lines of gins, and will use the space for part or all of the coming cotton season.

Early Volumes of the Manufacturers' Record Wanted.

The Boston Book Co., Nos. 83-91 Francis street, Back Bay, Boston, writes to the Manufacturers' Record as follows:

"We wish to get Manufacturers' Record, volumes 1 to 23, inclusive, and volume 25."

California led in petroleum production in 1903, with 24,382,472 barrels, Ohio being second, 20,480,286 barrels; Texas third, 17,955,572 barrels; West Virginia fourth, 12,899,395 barrels; Pennsylvania fifth, 11,355,156 barrels, and Indiana sixth, 9,186,411 barrels.

Eight steamers will load phosphate this month at Fernandina, Fla., their aggregate cargoes being 20,000 tons.

SOUTHERN BUILDING AND INDUSTRIAL ACTIVITY.

A short while ago the Manufacturers' Record published a letter from the secretary of the Commercial Club of Fort Smith, Ark., in which the exceedingly interesting fact was noted that having in 18 months brought 11 new industries to Fort Smith, the Commercial Club had still 50 good propositions that it was unable to handle and was endeavoring to persuade neighboring communities to avail themselves of these industrial opportunities. Suggested by that fact a letter was sent by the Manufacturers' Record to representatives of business bodies throughout the South, seeking to gather in a comprehensive survey other facts revealing the many activities with which the South is now teeming. The following five pages are devoted to the publication of the replies which have been received from many typical Southern and Southwestern communities.

Most of these communities have definite results to show for the work of their business organizations, and all of them, even the youngest, are alive to the opportunity for adding to their population and wealth through the attraction of enterprises to their limits. For many years commercial navigation of the Ocmulgee between Macon and Hawkinsville, Ga., has been practically suspended. But improvements have permitted its resumption by steamboat, and \$3,000,000 are awaiting investment at Macon as soon as this shall happen. Sandersville, Ga., is 100 years old. In recent years it has entered into the industrial life of the South, and during the past 18 months has spent \$245,000 upon improvements, including industries, stores and residences. In the same period Asheville, N. C., has erected, at a cost of \$293,000, a total of 117 buildings, and an expenditure of more than \$175,000 additional is represented in work under construction and additions. Chattanooga, Tenn., constantly increasing in importance as an industrial center, is looking to the spending by the government of millions of dollars during the coming year in nearby improvements, and to the consequent increase within its limits of wage-earners and producers. Preliminaries are well under way for the construction of a \$2,000,000 axe factory at Charleston, W. Va., which will require the erection of several hundred houses for employees. At Parkersburg, in the same State, about \$750,000 are now being spent in construction. The city is constantly being studied by manufacturers from other points, and an effect of such study is that there is fair assurance of the erection in the near future of three manufacturing plants representing an outlay of \$300,000. Many activities, commercial, industrial and railroad, center at Memphis, Tenn., where last year there were spent \$3,365,235 in building improvements. At this time 500 houses are in course of erection, and before October work will begin on two 15-story buildings, one 10-story building and a number of smaller structures, the conservative estimate being that the investment in building in 1904 will approach \$4,000,000.

Monroe is one of a number of Louisiana cities which, like New Orleans, have made wonderful progress in the last few years. Home capital has been courageous and progressive at Monroe, and its investment has brought into successful operation a sash and door factory, a hardwood factory, a molasses factory, a cotton mill, two lumber mills and a large brick-manufacturing plant, while many public and private improvements have been made. Meridian, Miss., has spent \$650,000 this year in construction, lumber mills are increasing in number at Jackson, Ala.,

while three industries have been added to Birmingham during the past 60 days. Rock Hill, S. C., has only recently completed a \$1,100,000 hydro-electric plant, which is now furnishing power for machinery and lighting within an area of 25 miles. Among the noteworthy improvements at Kansas City, Mo., are \$1,000,000 soap factory, a \$1,000,000 oil refinery and pipe line, a \$1,000,000 packing plant, several railroad elevators of large capacity and other additions to terminal facilities costing \$1,000,000. Fulton, in the same State, has spent \$200,000 this year in new buildings, and industries with \$130,000 capital have located at Springfield, Mo. A brick and tile factory costing \$20,000 and a modern flouring mill are nearing completion at Bentonville, Ark., and a number of fruit evaporators have been built there. A \$30,000 cotton compress and two cotton gins are nearly finished at Ballinger, Texas, and at Bells a small and young town in that State, a flour mill and oil mill are in prospect. A steel door and blind factory is one of the recent additions to the industries of Berkley, Va.; West Point, Va., is under the spell of improvements which has persisted since its fire, more than a year ago, and at Maysville, Ky., there is not an unemployed man who is willing to work. Blackwell, Okla., has increased its population from 500 to 4200 in six years, and 62 brick and stone buildings with a large hotel are to be built at once. Bartlesville, in a great oil and natural gas field of the Indian Territory, has become a thriving town of 3000 population within two years.

These are a few of the suggestive facts gleaned from the letters which follow:

Home of a Pioneer Industry.

[Special Cor. Manufacturers' Record.]
Titusville, Fla., August 13.

Titusville, on the Indian river, Florida, well known to lovers of the rod and gun as a winter base for their hunting and fishing expeditions, is destined in the near future to become a manufacturing town of some importance. Its people are progressive and energetic, and although its population is given as but 1000, it is already provided with paved streets, good sidewalks, electric lights, an ice factory, a lumber yard, boat yard and ways, a bank, two of the best newspaper plants in the State, well-stocked stores whose trade covers an extended territory, churches, an up-to-date graded school with gymnasium and military drill, fisheries and extract works where is manufactured a high-grade tanning extract obtained from the roots of the saw palmetto.

This latter is the pioneer in its line, and its promoter, Mr. Wm. M. Brown, well deserves the success which he has finally attained in this enterprise. There were many problems to solve in the manufacture of what the market required in the way of a tanning extract from the palmetto root. Mr. Brown sought advice in his enterprise from the best chemists he could find, and the high-grade extract now produced is largely the result of suggestions received from an eminent professor of chemistry in Vienna, Austria. The works are now on a profitable basis, and the proprietor is saying nothing and "sawing wood."

There are numerous other "propositions" waiting for the right man to develop them. The maguery plant, a source of much wealth as a producer of pulque, in the valley of Mexico, grows wild here, needing no cultivation. Pulque must be drank in the first two days, as there is no practicable way to arrest its fermentation. With the excellent transportation available from here, a pulque plant could

market its product as far north as Baltimore. This is a refreshing drink, and if properly introduced would become as popular as beer. It is particularly acceptable to middle-aged persons who have been prone to allow their stomachs to do the work of their teeth, as it promotes digestion and promptly relieves the effects of overeating. Valuable fiber plants grow wild in this soil and climate, and are waiting for the right man to utilize them.

Describing a circle of 10 miles radius, with Titusville as a center, artesian wells with a flow of from five to eight feet head produce a saturated solution of salt and other soluble minerals. The products of sodium and chlorine can be manufactured here at small cost and with large profits.

From the north line of the town, extending north along the river for 12 miles, is a palmetto forest. The leaves produce a fiber equal to that obtained from the coconut palm. The buds are used to make brushes. The trunk contains a material closely resembling cork. The application of a little inventive talent will produce marketable articles from this and many other tropical plants whose utility, although recognized, awaits proper experimentation and development. The field is here, and with the application of brains, patience and a moderate amount of capital, fortunes will be reaped with greater certainty than in the world's gold and diamond fields.

GEORGE M. ROBBINS, President.

Will Be a Banner Year.

[Special Cor. Manufacturers' Record.]

Manufacturers' Association,

Chattanooga, Tenn., August 8.

In 1894 the city had 110 manufacturing plants, employing, approximately, 4800 persons; value of output, practically \$9,000,000. In 1904 the city has 250 manufacturing plants, giving employment to over 10,000 persons, and value of annual products over \$30,000,000, showing an increase in 10 years of over 100 per cent. in the number of manufacturing plants and over 300 per cent. in the increase in the output, showing very clearly that the new plants started out on pretty solid basis, and that the older ones had added largely to their capacity, and to the number of employees required to operate them. 1904 will be the banner year in the history of the city in the number of buildings erected within the corporate limits and in the suburbs immediately adjacent to the city. There is not a month going by during which time there is not some prominent industry located here or plans put on foot for doing so. There is, perhaps, no city south of the Ohio river of the size of Chattanooga that has a greater diversity of manufacturing enterprises, and perhaps none of them turning out a more valuable line of products. The lines here that predominate are iron, wood and textile. Statistics recently prepared by the Manufacturers' Association of this city show about 450 different articles manufactured in this city. We have a well-organized Manufacturers' Association and a Chamber of Commerce that is the oldest and one of the most active organizations looking to the promotion of the city's interest of any similar organization in the State of Tennessee, and one among the oldest in the entire South. Chattanooga has an unsurpassed climate, and railroad facilities not excelled by any in the South. Our city limits are washed by the Tennessee river, claimed to be the seventh watercourse in magnitude in the United States, with both railroad and water communication. We possess the very best transportation advantages. The city is in sight of perhaps the most historical location in this country. Lookout Mountain, Mission Ridge and Chickamauga, three of the great battlefields of

the late war, are in sight of the city. The government and the different States have made Chattanooga and Chickamauga National Park one of the most attractive spots in the world. Markers, monuments and tablets everywhere bear testimony to a heroism unsurpassed, and as those who wore both colors during that great struggle have been instrumental in beautifying that historic field, there is no sectionalism manifested in that great work. There is not a day in the whole year, unless prevented by the elements, that there are not a large number of visitors from all sections of the country sightseeing at these historical places. Millions of dollars are being spent now by the government there in the erection of an army post and extending its limits, making more permanent the roads and avenues and adorning the grounds in harmony with the great purpose for which it was established. A permanent army camp has already been established there, which will no doubt be enlarged each year. The expenditures this year will go into millions. That great work will not only attract visitors and sightseers, but add largely to our population of both wage-earners and producers. There is no trouble in procuring good manufacturing or business locations either in the city or suburbs. Our local railroad facilities, reaching everywhere adjacent to the city like the spokes in a wheel, cover every demand for transportation advantages either in the city or in the adjacent suburbs. Parties desiring to engage in new business or change locations are invited to communicate with the Manufacturers' Association or the Chamber of Commerce, this city. Such communications will be promptly delivered and have courteous replies. A. J. GAHAGAN.

Manufacturers Looking Over the Situation.

[Special Cor. Manufacturers' Record.]

The Business Men's League,

Parkersburg, W. Va., August 9.

During the depression and curtailment in business that prevailed over the country during the past few months, Parkersburg, W. Va., probably felt it less than any other city in the country. This city has never had a real-estate boom, but its steady, healthy growth during the last few years has been phenomenal. It has been conspicuous for many years for the number and strength of its financial institutions. As an instance of the accumulation of money here may be cited the fact that only about 12 months ago a new trust company was organized. Today this company has a capital and surplus of \$500,000 and assets of over \$1,700,000. And yet another large bank will be opened for business on the 15th of the present month, with a capital of \$500,000. This will give Parkersburg 10 large banks and trust companies, all in flourishing condition.

During the present year building operations have been in a more than healthy condition. At this time about \$750,000 is being spent in buildings under course of construction. A \$225,000 banking house and office building was completed the first of the month; a \$70,000 school building is going up, and a Y. M. C. A. Building and Elks' Home that will cost something over \$50,000 each are about half completed. The prospects in the building line are more than usually bright. The slight falling off in the cost of building material will cause many improvements to be made that were delayed, waiting for lower prices on building material.

Local industries are working full time, with orders enough to fill that will insure full time for their men for the rest of the year.

It would seem that the manufacturers are just realizing that Parkersburg is one of the best-located inland towns on the Ohio river. Every week there is a visit

from one or more manufacturers looking over the situation with the view to locating a factory here. Negotiations have about been consummated by which a large pottery will be built here, giving employment to 300 people. Work is expected to begin on this plant within the next 15 days. A large plate-glass factory and a window-glass manufactory are making arrangements that will probably result in both of these plants being built here. It is the intention to begin work on the last two plants as soon as possible, so as to have the buildings completed before cold weather sets in. The cost of erecting and equipping the three plants mentioned will require an outlay of \$300,000.

Parkersburg's wealthy business men are investing their money in manufacturing and industrial enterprises to a greater extent than ever before. There is a determined spirit on the part of the business men to make Parkersburg the Pittsburg of West Virginia. If cheap fuel, natural resources, advantageous location, transportation facilities by rail and by water, push and money can do this, it will be accomplished during the next few years.

The most significant and far-reaching occurrence during the past week is the determined effort now being started on the part of the citizens of Parkersburg to induce the Wabash Railroad to resume at once work on the Little Kanawha road, which was suspended during the early summer of 1903. The remaining right of way is to be acquired at a reasonable figure and other inducements offered. The Wabash intends to finish this road as soon as the Pittsburg work is completed, but the citizens are not willing to wait, and are going to make it interesting for the Wabash to take up the suspended work at once.

From now on there will be steady improvement in all lines of business in Parkersburg. The year 1905 will probably bring the most rapid development along building and industrial lines that this place has yet witnessed.

O. S. HAWKINS, Secretary.

Three Years at Memphis.

[Special Cor. Manufacturers' Record.]

Industrial League,

Memphis, Tenn., August 8.

The development of Memphis is the development of her contiguous territory. The deltas, both on the Mississippi and Arkansas sides of the river, are undergoing kaleidoscopic changes that would read like the story of Aladdin's lamp.

Lands that a few short years ago were virgin forests, subject to overflow and the malaria and mosquitoes incidental thereto, celebrated chiefly for the good hunting and fishing to be found there, and for sale at from 10 cents to \$1.50 an acre, are now thriving, healthy little cities, with mills, manufacturing plants, small farms and thrifty growing communities, and the land in active demand at from \$12 to \$20 per acre.

It has been well said that in a few years the St. Francis basin would maintain a city of 250,000 people at Memphis. If this is true, and what intelligent man can doubt it, how about the Mississippi side, the "Great Delta," starting eight miles south of Memphis, gradually widening until it is almost an empire in itself, penetrated in all directions by railroads and dotted here and there with towns, each one vying with the other in inducements held out to manufacturers and farmers to locate.

Consider these conditions and compare them with other days, when there was nothing but the cultivation of cotton and the commercial development incidental thereto.

Now you have mills in all directions, sawing hardwood lumber both for foreign

and domestic demand. The advertising of Memphis as the "Key City to the Great Hardwood Section" has not only resulted in the establishment of woodworking plants in Memphis, but in the purchase of large tracts of timber land in Memphis territory, which are being cleared and then sold to farmers.

Thus the good work goes on, and in spite of the fact that most all sections of the United States are experiencing a depression and consequent checking up on investments and developments.

Memphis and her territory is more active now than at any time in her history. As proof of this statement, note the following facts:

Clearing-House Reports.—1901, \$154,487,935.75; 1902, \$179,199,939.22; 1903, \$214,009,558.12; five months of 1904, \$113,684,063.99; increase over same period of 1903, \$29,810,496.79.

Postoffice Receipts.—1901, \$247,292.94; 1902, \$294,052.57; 1903, \$342,120.71; five months of 1904, \$161,945.67; increase over same period of 1903, \$27,597.85, or 20.50 per cent.

Building Improvements.—1902, \$2,532,000; 1903, \$3,265,235.

Real-Estate Transfers.—1902, \$4,259,290; 1903, \$6,174,040.

City Directory Census.—1901, 141,360; 1902, 150,223; 1903, 159,326; 1904, 165,457. These figures include about 25,000 inhabitants just beyond the city limits, not enumerated in the United States census.

Volume of business 1903, \$300,000,000.

The largest hardwood-producing lumber market in the world.

Produces more cottonseed products than any city in the world.

Largest inland cotton market in the world.

The largest artesian water system in the world.

One of the largest bridges in the world (the only one spanning the Mississippi river south of St. Louis).

Twenty banks and three trust companies; capital and surplus, \$6,000,000; deposits, \$26,000,000.

Has the lowest deathrate of any city of 100,000 or over in the United States.

123 churches (all denominations).

65 schools, colleges and seminaries.

850 manufacturing enterprises.

Five theaters. One park theater.

Two racetracks, running and driving.

125 miles of electric street railway.

26 local steamboats.

250 miles of turnpike.

1000 acres in public parks.

In all this growth and development the metropolitan district of Memphis is but fulfilling her manifest destiny. Hergrowth and development in the last three years, while remarkable, is but the result of the placing of her advantages before the outside world through the medium of printer's ink and a direct correspondence with the manufacturers of the country.

The great systems of railways are spending large sums of money in the development of adequate terminal facilities to handle the business that is offered, and in building shops, gravity yards, etc.

The Belt Line of about 20 miles will soon be completed, and will be of great service in the handling of business, both in and out and through the city.

The locating of a large number of factories, jobbing houses and depots for distribution of manufactured products throughout this trade territory by the Industrial League during the last three years has helped wonderfully in making Memphis a great manufacturing and industrial center, as well as financial and commercial center.

These plants and those established by local people, added to the 659 factories

shown in the United States census reports of 1900, make her indeed a great manufacturing center.

The building during the last two years has been very active, averaging more than 2000 houses per year, and at this time over 500 houses are in course of construction, and the architects' offices are full of plans for new residences to be erected during this year.

The following large office buildings are in the hands of the contractors, and work will be commenced on them before October 1:

Memphis Trust Co. building, 15 stories.

Tennessee Trust Co. building, 15 stories.

Goodwyn Institute, 10 stories.

In addition to these, many storehouses and business blocks, churches and apartment-houses are in course of erection.

I have no doubt but that our building improvements will approximate \$4,000,000 this year. The business of this office is increasing rapidly, and in addition to the work of locating industries, it is being continually drawn on for general information about Memphis and the surrounding country, not only by strangers, but by the citizens of Memphis.

J. F. PETERS, Commissioner.

Improvements Following Fire.

[Special Cor. Manufacturers' Record.]

The Board of Trade,

West Point, Va., August 8.

West Point on April 30, 1903, had its chief business houses destroyed by fire, and many of its largest merchants lost their places of business and stock of goods. Today these same merchants have erected large brick stores, and are doing a larger business than before the conflagration.

At the time of the fire the town had no fire protection, while today it has a well-organized fire company, with ample water-works constructed by one of the best engineers in the country, and in case of fire is as fully protected as any town of its size in the South.

At the time of this fire the town was badly sewer, and the houses were not supplied with water, while today it is well sewered over a large part of its area, and pipes are being rapidly laid in other parts where needed; the houses are being supplied with water from the town water-works, which places in the buildings a health-producing artesian water, which flows from a depth of 330 feet below the surface.

With five oyster establishments, a pickle factory, a woodenware factory, a splendid record for good health, the very best shipping facilities by railroad or steamer, it offers a place for investment to those who desire to start industries, and with whom the Board of Trade would gladly confer. The town at the present time is not lighted by electric lights as it was before the great fire, but its council is making every effort to secure some capitalist to introduce such light, which would be readily patronized by its 1500 inhabitants and its large number of business houses, and by the town for lighting its streets.

The surrounding country is fertile and suitable for raising as fine trucks as can be produced at any place, thus offering a splendid opening for canning factories.

The L. E. Mumford Banking Co. has within last year erected a substantial and well arranged two-story brick building on the principal street, in which it does its banking business, and with its deposits of over \$1,000,000 it does the banking business of the surrounding country.

The residences which were destroyed by fire are being rapidly replaced by handsomer buildings.

The hotel facilities are ample, and thousands of visitors come here during the

summer to enjoy the bathing, fishing, etc., in the salt water of York river.

The Business Men's Association and its Board of Trade are alive to the interest of the town and surrounding country, and can be depended on to furnish correct information as to the same.

We believe that if we can secure the aid of the Manufacturers' Record, which has been such a great factor in developing other Southern towns, we shall soon be known to the financial world and our present prosperity greatly increased.

B. TURNER, Chairman.

Plenty of Room for More Factories.

[Special Cor. Manufacturers' Record.]
Board of Trade,

Keyser, W. Va., August 9.

I take pleasure in giving you a few points in regard to Keyser, W. Va., in which we think our location is advantageous as a manufacturing point.

Located at the foothills of the Allegheny mountains, on the north branch of the Potomac river, it is most healthful, and, being surrounded by a prosperous farming community, living is cheap.

We are within 10 miles of the celebrated Elk Garden and George's Creek coal regions, and fuel can be purchased at lowest price.

All kinds of lumber are readily obtainable at reasonable prices, and a good market for manufactured products nearby.

We already have large furniture and wagon factories, and quite recently the Patchett Worsted Mills has been established and is doing an extensive business. Col. T. B. Davis, brother of the nominee for Vice-President of the United States, a resident of the town, owns a large tract of land along the river, which has been reserved for manufacturing purposes. We are on the main line of the Baltimore & Ohio Railroad and the West Virginia Central branch of the Wabash.

The Baltimore & Ohio Railroad has recently expended a large amount of money for the purpose of division terminal facilities, and also has large repair and car-building shops. There is still plenty of room for more factories, and our people are always ready to do everything in their power to assist and encourage manufacturing. JAS. T. CARSKADON, Secretary.

Not an Unemployed Man in Town.

[Special Cor. Manufacturers' Record.]
Board of Trade,

Maysville, Ky., August 8.

Maysville is the best location for general manufacturing of any city in Kentucky, being located on the Ohio river, with two great railroad systems, the Chesapeake & Ohio and Louisville & Nashville. This assures us cheap freight and cheap fuel. We are also surrounded by the finest agricultural country in the world, with a population approximating 10,000. The city is taking on a new life. The Maysville Warehouse Co. is erecting a redrying house 220x242 feet and a storage warehouse 212x229 feet, both one story, which it has leased to the Continental Tobacco Co. The erection of these buildings now gives employment to a large force of hands; they will cost about \$50,000. A sewer will be constructed, work begins at once, with a cost of about \$18,000. The Sphar Pressed Brick Works will soon be ready for business, and will give employment to a large force of hands. The Maysville Foundry & Machine Co. has recently enlarged and greatly improved its plant, and a new street-making machine has been purchased recently, and all our main thoroughfares will be reconstructed and Maysville will have modern streets. A recent appropriation of \$50,000 and the purchase of a lot assures the erection of a government building in our city within a very short time. There is

not an unemployed man in Maysville if he is willing to work.

JOHN DULEY, President.

Invitation to Investors.

[Special Cor. Manufacturers' Record.]

Board of Trade,

Meridian, Miss., August 8.

No city in the South, so far as my information goes, has the outlook that Meridian has at this time. There is under construction, has just been finished and is to be built this year something over \$650,000 in public buildings, which does not include any residences. Since all of these have the money for their construction, and are not on the market for more money, it will not serve the purpose to list them. No city of the size in the South invites more cordially those who want to come here for investment, and all such have the open sesame to any advantages that belong to old residents. Prompt reply will be given all inquiries by the secretary of the Board of Trade.

H. L. MCKEE, Vice-President.

Berkley Rapidly Growing.

[Special Cor. Manufacturers' Record.]
Board of Trade and Business Men's Association,

Berkley, Va., August 10.

Berkley, Va., topographically, has the same relative position to Norfolk and Portsmouth as New York to Brooklyn and Jersey City. As an ideal place for manufacturing sites it is simply unexcelled, having abundant water front on the Elizabeth river, and being connected through the Belt Line Railroad with all of the railway systems coming into Norfolk and Portsmouth. Any port of the world can be reached from this point without difficulty.

The monthly pay-roll of the manufacturing industries located here is, approximately, \$125,000. Among the more recent industries to be established are Garrett & Co., operating one of the largest wineries in the world, and the Wilson Manufacturing Co., manufacturer of steel doors and blinds. This, too, is an immense plant, and the product is distributed all over the United States. Of the nine saw and planing mills operated here, four of them cut daily over 3,000,000 feet of lumber.

The government training and recruiting station is also located in Berkley, where there are constantly from 1000 to 1500 men in training for the government service.

There are numerous other industries of more or less importance, making altogether a rapidly-growing community. However, there is abundant room for other desirable enterprises, and the Berkley Board of Trade and Business Men's Association will be glad to confer and assist in any way possible in the location of manufacturing industries in our midst. We congratulate the Manufacturers' Record on its wonderful work in the development of the South.

W. B. DOUGHERTY, Vice-President.

Spent \$1000 Per Inhabitant.

[Special Cor. Manufacturers' Record.]

Sandersville, Ga., August 9.

The town of Sandersville, Ga., although about 100 years old, has begun to take on new growth, and the following improvements have been erected in the past 18 months, and many more are contemplated in the near future: \$16,000 has been expended for a new cotton warehouse to run in competition to the one already here; \$50,000 in a cottonseed-oil mill; \$10,000 in fertilizer-mixing plants; \$30,000 in a new brick hotel, now in course of erection; \$40,000 in a system of water-works and electric-light plant, now in course of construction; \$8000 in a new sanitarium, now in course of erection; \$10,000 in two new brick stores, now in course of erection; \$8000 in a new brick Methodist church;

\$12,000 will be put in a new Baptist church and work will begin on it in a short time; \$60,000 has been put in new residences in the past 18 months, and several more are contemplated; total, \$245,000. Two hundred and forty-five thousand dollars has been put in improvements in a town 18 months ago which did not boast of but 2500 inhabitants, and the population has been increased from 500 to 1000.

There is a fine opening here for a cotton mill, Sandersville being the county-seat, and situated in the center of the next to the largest cotton-producing county in the State of Georgia.

WARTIEN & IRWIN, Bankers.

Little, But Aggressive.

[Special Cor. Manufacturers' Record.]

Jackson, Ala., August 8.

Jackson, Ala., is situated where the Southern Railway crosses the Tombigbee river, 60 miles north of Mobile. Few small towns have had as steady and permanent growth in the last few years. Within the last 10 years we have grown from about 300 to over 2000. Most of this growth has been within the last five years. We have four lumber mills in active operation, ranging from 50,000 to 125,000 feet per day. Two of these mills have gone in within the last six months. We have also gravel mill, cigar factory and brick factory, and we have just completed and equipped an elegant brick drug store, iron front. This makes two first-class, up-to-date drug stores, besides other splendid business of special and general lines of trade. We will soon have an up-to-date electric-light system. The plant is on the ground and being installed for a complete telephone system. Here is a splendid State school, where a full college course can be had free. We are now installing an industrial department in the school, consisting of agricultural, dairy and mechanical work, so a boy can get the practical instruction along with his literary work. There is talk of a furniture factory going in soon. We have all kinds of hardwoods sawed here, as well as yellow pine. Ground has been bought for a handle factory. We need a wagon factory, a small foundry, broom factory, a knitting factory, etc. We have on the very line of the corporate limits a large deposit of a superior grade of yellow ochre. The mine is opened up and ready for operation, and is for sale. In fact, I know of no other point in the South so rich with resources for manufacturers and trade as our town. We have a splendid weekly paper, three beautiful church buildings, etc.

I must not forget to say that the cement material right around our town is practically limitless, and is attracting considerable investigation. We have also on the corporate line of the town a fine white sulphur water, which is being drank and shipped in considerable quantity. Any information I can furnish your paper or inquiring subscribers at any time I will do with pleasure.

S. A. ADAMS.

Developing by Electric Power.

[Special Cor. Manufacturers' Record.]

Board of Trade,

Asheville, N. C., August 8.

A building has been finished and a new cotton mill has been organized, with a paid-up capital of \$150,000; local investors. One hundred Jacquard looms for fancy work are included in the equipment. The mill will employ 100 persons. It is run by electricity from the W. T. Weaver water-power plant, which also supplies the power for the other cotton mill here and for smaller industries.

During the year ending June 30, 1904, 117 buildings, comprising 101 dwellings, 10 stores, three private stables, one Y. M. C. A., one bank and one school, were erected at a cost of \$293,000.

Nine buildings, consisting of one store,

one auditorium, one modern flat, one church and five dwellings, are now in process of construction at a cost of \$122,500.

Additions to 16 buildings, including five dwellings, 12 stores and one medical institution, have been made at a cost of \$54,700.

Five buildings cost from \$10,000 to \$20,000.

Eight buildings cost from \$5000 to \$10,000.

Thirty-two buildings cost from \$3000 to \$5000.

Twenty-six buildings cost from \$1500 to \$3000.

Fifteen buildings cost from \$1000 to \$1500.

Twenty-eight buildings cost from \$100 to \$1000.

The total amount in buildings, additions and work under construction equals \$470,200.

Plans are now being perfected, and are in many cases in the hands of contractors, for residences and stores, one brick plant and a railroad depot, at an approximate cost of \$155,000.

During the year covered by this report there have been recorded in the office of the register of deeds real-estate transactions amounting to \$1,242,406.39.

W. F. RANDOLPH, Secretary.

\$200,000 in New Buildings.

[Special Cor. Manufacturers' Record.]

Commercial Club,

Fulton, Mo., August 8.

Fulton is the county-seat of Callaway county. It has a population of 5000, exclusive of its three colleges, State School for the Deaf and State Hospital No. 1, with about 2500 more. Coal-mining is quite an industry here. A fire-brick factory gives steady employment to about 100 men. We have city water and light plant. A sewerage system is just being put in. There are nearly \$200,000 in new buildings and other improvements this year. The survey for an electric railway from Kansas City to St. Louis passes through Fulton, with good prospects of success. We have about 40 miles of graded streets and roads leading to Fulton.

W. W. ARNOLD, Secretary.

Expenditures in Civic Betterment.

[Special Cor. Manufacturers' Record.]

Monroe Progressive League,

Monroe, La., August 10.

It is with pleasure that we give you below facts regarding the great development of Monroe in the past three years, and while this shows a wonderful development, the records are here, and we will gladly show them to anyone who doubts the correctness of same.

Three years ago we voted \$300,000 tax for two railroads, one from the northwest and one to the southwest. One is nearly completed and the other is now under construction.

We also voted a 10-mill tax for 10 years, with the following results: Free traffic bridge across the Ouchita river, \$88,000; city high school, \$75,000; parish high school, \$30,000; 12 miles sanitary sewer, \$38,000; 20 miles paved and graveled streets, \$70,000; purchased water and electric plant and improvement of same, \$100,000; purchased gravel pit for city to gravel and improve residence streets and streets leading to country, \$5000, and city market, absolutely fireproof, \$25,000.

In 1904 we voted a five-mill tax for 10 years for public improvement, viz., new City Hall, engine-house and city prison, at estimated cost of \$60,000, and construction of city electric railway, at estimated cost of \$90,000 to \$100,000.

We have secured sash and door factory, hardwood factory, molasses factory, cotton mill, two lumber mills and large brick-manufacturing plant; all above at a cost of \$370,000, this money being sub-

scribed by home capitalists.

Population, Monroe, 1901, 5000; 1904, 10,000; West Monroe, 1901, 1000; 1904, 3900.

West Monroe, on west bank of Ouachita river, owns water and electric-light plant. They have also caught the progressive spirit of Monroe, and are moving ahead.

During the past three years we have erected Methodist church, \$30,000; Presbyterian church, \$25,000; Catholic church (in course of construction), \$50,000; over 500 dwelling-houses, at a cost of \$200,000; new theater, at cost of \$50,000, and 15 large new business buildings and hotel, 100 rooms, at cost of \$250,000. Four new steamboats, built by Monroe capital, plying between New Orleans and Camden, Ark., taking in Monroe territory, cost \$150,000.

We secured free delivery three years ago.

The United States government opens bids August 17, 1904, for locks and dams in the Ouachita river, making same navigable all year.

Monroe and West Monroe are ideal locations for manufacturing plants, such as furniture and hardwoods, and our people will aid and assist financially and otherwise any legitimate enterprise.

The information that we have given you is taken from records, and are facts beyond any question of a doubt, and we can cheerfully substantiate same by the records of this city. We will take pleasure in giving anyone information at any time regarding Monroe, Ouachita parish and North Louisiana.

We consider that the Manufacturers' Record has done more than any other agency to develop the South. We hope you may have many years to continue your good work.

This country is in its infancy, the development of which will make one of the richest valleys in the world.

H. D. APGAR, Secretary.

In Territorial Oil Fields.

[Special Cor. Manufacturers' Record.]

Bartlesville Commercial Club,
Bartlesville, I. T., August 9.

Bartlesville is an oil town founded about four years ago in the Cherokee Nation, located about 20 miles south of the Kansas line, on the Caney river.

In the last two years the town has grown from a few scattered buildings to a thriving little town of over 3000 people. The original small box-house stores are being rapidly replaced by substantial two and three-story stone and brick buildings of modern architecture, there being over a dozen of such buildings erected during the last year, and as many more under contemplation.

At the present time the city is building a high school at a cost of \$20,000. A site is being cleared for the construction of a modern water-works plant, which is to be completed before the first of January, 1905, at a cost of about \$60,000.

The town has three national banks, two railroads—the Atchison, Topeka & Santa Fe and the Missouri, Kansas & Texas—has a local and long-distance telephone exchange, a first-class ice plant, a glass factory, two machine shops for the manufacturing of oil-well supplies, a brick plant and a half-dozen wholesale houses supplying oil-well supplies. The town is supplied for lighting, fuel and all other purposes with natural gas, is situated in a rich farming country, and what seems to be from present developments an almost inexhaustible oil and gas field.

Several hundred oil and gas wells have been drilled in the vicinity, many of the wells flowing natural when brought in 200 barrels per day and over. It is a conservative estimate to put the average of the field at 25 barrels per well per day.

Of gas there seems to be an almost inexhaustible supply, it not being unusual for a well to flow from 12,000,000 to 15,000,000 cubic feet per day. For this reason numerous factories are seeking locations here on account of cheap fuel, but up to the present time the laws have been such that it has been impossible to obtain titles to lands for such purposes, and all factories, plants, etc., have been discouraged from locating here for want of title to lands, the title being vested in the Cherokee Nation. Now, however, the land has been allotted and the townsite appraised, the town already having titles, and by certain processes allotted lands can be had and title obtained.

The oil fields promise to be the most extensive yet discovered in the United States, there now being a line of development from the Kansas fields covering a distance of about 100 miles, all rich in oil, and as to the width of the field, and how much further it extends south, no one knows, as it has not been developed, the development being held back for want of titles to lands. With the removal of this obstruction the development will be rapid. In 92 wells drilled in the immediate vicinity of Bartlesville only four of them showed no oil, and three out of the four were gassers, making but one non-productive well—a most remarkable showing.

The Standard Oil Co. is now completing a pipe line to take the product of this field, which will carry it direct to its refineries. P. O. BUCHER, Vice-President.

Looking to Trolley Development.

[Special Cor. Manufacturers' Record.]

La Grange, Ky., August 11.

La Grange is 27 miles from Louisville, Ky., and 83 miles from Cincinnati. It is eight miles from Ohio river, by which we get coal. We are prospecting for a hat manufactory and a shoe-manufacturing plant here. We are unexcelled as to healthy location and plenty of best water. There is getting to be a great demand for our water. The Anita Springs Water Co., capitalized at \$100,000, is shipping many thousand gallons each month, as is also the "C. M. Springs Co." The medicinal qualities of our waters are acknowledged, and many parties are here every summer to get the benefit of cures. When the trolley line to Louisville is completed, now within nine miles of us, we will be a great resort for the health and pleasure seekers of our near cities. We have fine fruit and farming lands. We excel in orchard grass seed, Oldham county furnishing more than any county in Kentucky. We fatten and ship many thousand dollars of beef cattle every year.

J. T. WILSON.

Studied in Many Sections.

[Special Cor. Manufacturers' Record.]

The Commercial Club,

Rock Hill, S. C., August 11.

In the short time that has elapsed since Rock Hill gave \$65,000 to insure the establishment here of Winthrop Normal and Industrial Institute at an outlay of \$500,000, the city has experienced a remarkable but entirely natural growth. It has five cotton mills, a buggy factory with capital of \$200,000 sending its output as far as South Africa and New Zealand, and numerous other industries, including wood-working, flour and other mills. In the last three months it has witnessed the completion of an hydro-electric plant costing \$1,100,000, which is now furnishing power for machinery and lighting for a territory embracing an area of 25 miles. There are now under construction or just completed not less than 50 dwellings, and more are needed.

The attention of the people of the North and West is at last being turned in this direction. The constant labors of exponents such as the Manufacturers' Record in exploiting and illustrating the advan-

tages of a practically undeveloped section are bearing fruit in the coming of small farmers to take up our lands; in the establishment of enterprises where power, material and labor may be had at their cheapest and best; in the creation of a new spirit among those already here, an awakening to a better appreciation of opportunities and a lively determination to assume a rightful place among the foremost of the country's industrial communities.

Inquiries are being received by this club from Texas, Arizona, Colorado and New York, while one Northern connection is having printed and distributed at its own expense 10,000 descriptive circulars.

JOHN WOOD, Secretary.

No Mushroom Growth Here.

[Special Cor. Manufacturers' Record.]

Springfield Club, Bureau of Publicity,
Springfield, Mo., August 10.

Springfield is just now experiencing a good deal of activity, both along the line of building residences and starting new industries of various kinds. We have nothing of the mushroom growth common to Western towns in the latter part of the eighties, but a steady, solid and permanent increase in all the elements that go to make a real town. A conservative estimate of the growth of this place since the taking of the United States census would make the increase in population about 10,000, or the present population of Springfield about 35,000.

We have located during the past year the following new industries, i. e.: Eagle Pencil Co., capital \$30,000, employing 65 hands; Springfield Pure Milk & Butter Co., \$20,000, 20 hands; Apex Cheese & Butter Co., \$20,000, 20 hands; Springfield Canning & Preserving Co., \$25,000, 30 hands; Geiser Manufacturing Co. plant, \$20,000, 20 hands; a banana warehouse 70x600 feet, which will cost about \$15,000 and employ 30 hands, the Western Shoe-blackening Co. and a lot of smaller concerns. Besides this, the Frisco Railroad has largely increased its shops here both in building and equipment, necessitating, when completed, the employment of at least 200 men in addition to the 2000 already employed. The Woods-Evartz Stove Co., the Eisenmayer Milling Co., the Wondelich Cooperage Co. and the Lovan Saddlery Co. have each built new buildings and doubled their former output.

The bureau of publicity of the Springfield Club has only been in operation some five months, but through it a large part of this work has been accomplished. It is quietly working on a number of other propositions, and before the close of the year a number more of valuable enterprises will have been secured.

We are, however, continually on the lookout for some factory suited to this locality, and have faith to believe that our industrial movement has only commenced. We need a shoe factory, a tannery, a mattress factory, a pottery, and, in fact, any kind of an institution that is looking for a good distributing point for the finished product, where labor is cheap and the workman owns his own home.

The climate is simply superb, and no better residence city of its size can be found in the West.

The bureau is established primarily to give information to the man seeking a new location for a factory or other industry or to guide the homeseeker to a field where there is room for the exercise of brain or muscle and competence or wealth for the industrious, intelligent exercise of either.

G. A. RAMSEY, Secretary.

On Threshold of Its Greatest Activity

[Special Cor. Manufacturers' Record.]

Chamber of Commerce,

Charleston, W. Va., August 12.

This city is now on the threshold of the period of greatest industrial activity in

its history. The preliminaries for the construction of the plant of the Kelley Axe Manufacturing Co., with an investment of \$2,000,000, are well under way. The removal of this great plant to this city means the removal here of hundreds of families, for whose occupancy homes must be provided. To meet this demand hundreds of houses will have to be erected. A goodly portion of these will be erected by the West Charleston Company, one of the largest land companies here. This means additional building activity.

Another large concern, with a capital of several millions, is seriously considering locating here. Everywhere the immense coal and natural gas resources of this section are beginning to attract attention, and the Chamber of Commerce is constantly in receipt of letters from industries, large and small, seeking locations.

Recently two new first-class hotels have been thrown open to the public—an indication of the growing importance of the place.

Few cities or towns in the middle South have brighter prospects for a steady and substantial growth than Charleston.

CHAS. LOEB, Secretary.

Many Substantial Improvements Under Way.

[Special Cor. Manufacturers' Record.]

Business Men's League,

Bentonville, Ark., August 11.

Many substantial improvements are now under way within our limits. A modern brick and tile factory costing \$20,000 with a capacity of 30,000 per day is just nearing completion. A modern flour mill of 125 barrels capacity will soon be in operation. A number of fruit evaporators costing from \$5000 down have just been built, and as many more are needed. Bentonville has the largest apple-brandy distillery in the world, and another of equal size would be of great benefit to the farmers, whose apples are now allowed to decay in the orchards.

Our greatest need at the present time is for capital to utilize our fruits in various ways, such as the making of fruit jams, jellies, cider, vinegar, canned goods, etc.

People from the South, as well as the North, are being drawn our way because of our delightful climate and pure water, and there are no less than 25 buildings going up at the present time. We need a modern hotel building, and plans are now under way to secure the same.

Bentonville has the finest cold storage, electric-light plant and water-works system in this part of the State, all owned by the city.

The Business Men's League offers its services at any time in interesting prospective buyers and investors, and all communications will receive prompt attention.

F. M. BATES, Secretary.

A Diversity of Energies.

[Special Cor. Manufacturers' Record.]

Commercial Club,

Ballinger, Texas, August 10.

The Ballinger Commercial Club takes pleasure in giving you a few data as to Ballinger's progress. Ballinger is 18 years old, and has a population of 2500. Religious denominations are represented by seven nice convenient stone churches. It has a stone schoolhouse costing \$12,000, built by public donations; an ice factory, bottling works, flour mill, four gins, oil factory, compress, electric lights and telephone service. A cottonseed-oil plant built last year at a cost of \$50,000 made a good dividend, and stock is worth \$1.25 today. A \$30,000 cotton compress is now nearing completion. Machinery is being placed in two gins at this time that will be ready for the fall crop. There are six residences now being erected at a cost of \$3000 to \$8000 each. The country is filling up rapidly; in fact, this section is on the march, and Ballinger leads the procession. More

capital and aggressive business men will find this a good field.

J. W. POWELL, Secretary.

Noteworthy Improvements Under Way.

[Special Cor. Manufacturers' Record.]
The Commercial Club of Kansas City,
Kansas City, Mo., August 11.

I submit herewith a list of the most noteworthy improvements in the way of new enterprises and buildings that is now in process of construction in Kansas City: Proctor & Gamble Soap Co., costing \$1,000,000; Standard oil refinery and pipe line from Kansas, costing over \$1,000,000; Nelson Morris & Co. packing plant, costing \$1,000,000; new flouring mill, Aug. J. Bulte Co., costing \$100,000, capacity 1000 barrels per day; Missouri Pacific grain elevator, storage capacity 1,000,000 bushels; Chicago, Milwaukee & St. Paul elevator, storage capacity 1,000,000 bushels; Chicago, Rock Island & Pacific elevator, storage capacity 1,000,000 bushels; Burlington system elevator, storage capacity 1,000,000 bushels; Atchison, Topeka & Santa Fe Railroad freight house, costing \$250,000; improvements on railroad terminal facilities now being made on following roads, costing about \$1,000,000: Missouri Pacific, Frisco system, Chicago, Milwaukee & St. Paul, Chicago, Rock Island & Pacific and Chicago & Alton railroads. The established elevators here are all increasing their capacity.

The West is in a good healthy business condition. The probabilities for a large yield of wheat and corn are more encouraging than the wet weather of June and July had warranted in believing. We now expect to have a very good crop, and our merchants are preparing for a big business this fall.

E. M. CLENDENING, Secretary.

Preparing for Improvements.

[Special Cor. Manufacturers' Record.]
Commercial and Improvement Club,
Bells, Texas, August 10.

We have under consideration now the construction of a large lake to cost \$10,000, to be used by the Texas & Pacific Railroad Co. and the city. We propose to make summer resort. We are also preparing for the erection of a \$15,000 brick school building. We expect to have electric lights later on. A flour mill and an oil mill are objects in view. We are in line for all possible improvements, and solicit correspondence.

CHARLES F. SPENCER, Secretary.

Three Plants in Sixty Days.

[Special Cor. Manufacturers' Record.]
The Commercial Club,
Birmingham, Ala., August 13.

We are moving along here in a quiet way, but always moving, and at the end of the year will doubtless be able to make as good a report as other cities of this size. We have located during the past 60 days two or three manufacturing plants.

The marked article in the Manufacturers' Record of August 4 was indeed interesting and valuable. It gave a full and accurate statement of facts in regard to the Alabama exhibit, and I think the article was written in such a way as to result in much good to the district, especially since it was given to the public through the Manufacturers' Record.

J. B. GIBSON, Secretary.

A Good Point for Manufacturers.

[Special Cor. Manufacturers' Record.]
Board of Trade,
Bristol, Tenn.-Va., August 13.

Bristol, Tenn.-Va., the gateway to the Southwest Virginia coal fields and the Tennessee and Western Carolina iron ores and minerals, is surrounded by forests of fine timbers, including oak, poplar, pine, hemlock, and also many of the finer hardwoods.

Bristol's location not only makes it

eminently available for manufacturing purposes, but an important distributing point, and consequently a place noted for its extensive wholesale business, embracing almost every feature of commercial life. In 10 years Bristol has grown to be an important wholesale and manufacturing center, with many large wholesale houses and important industries. It is also an educational center, with fine public school and college buildings. Bristol's male and female colleges are among the very best in the South. Bristol has invested in school property more than \$500,000, and besides numerous churches already in existence, there are now being spent for new edifices sums aggregating \$75,000.

Bristol has more than 30 miles of fine, broad concrete sidewalks, and the business streets are paved with vitrified brick.

The railway terminal facilities have recently been improved by the expenditure here of \$125,000, more than half of which is represented in a handsome modern union station erected by the Norfolk & Western Railway.

For many reasons Bristol is an excellent point for manufacturing enterprises, and especially is this true as regards wood-working plants, on account of the abundance of timber, its nearness and the excellent railway facilities by which the timber is shipped in and the finished product shipped out. Within the past few years Bristol has added to her industrial enterprises to the extent of almost \$1,000,000 as regards the capital invested, but these plants are all of a nature that require male labor. For this reason Bristol has a surplus of female help, which makes this a desirable location for the establishment of knitting mills and manufacturing plants in general of the class that give employment to females.

Bristol has a population of upwards of 15,000, one-third of which has been added within the last six years. The population is only about 15 per cent. colored.

Bristol's climate is almost perfect as regards healthfulness, the location being practically the same in altitude as that of Asheville, N. C. The nearby mountains afford us at all times an invigorating atmosphere. N. B. REMINE, Secretary.

Facts of a Natural Growth.

[Special Cor. Manufacturers' Record.]
Gainesville, Fla., August 12.

Gainesville, Fla., has a population, including suburbs, of 5000. The city is well located, and has the finest water supply to be found in the entire South. We are in the center of the Sea Island cotton area, and in the midst of the great vegetable industries of Florida.

Within the last 18 months there has been expended in new buildings and their equipment not less than \$196,000. The new industries projected and enlargement of plants now doing business will represent a capitalization of about \$180,000. Ten new brick storerooms have been built and are now occupied, while two more will soon be finished and have been rented. The Phifer Bros., merchants, are about completing a large two-story brick building; the lot and building cost \$14,000. Eddings & Co. planing mill will put in improvements amounting to \$20,000, part of which is now done. A coffin factory and planing mill has been built, capitalized at \$20,000. We have a modern electric-light plant, giving good day service also, which represents an expenditure of \$35,000; also a chemical factory which extracts 30 different products from pine wood is in successful operation, at a cost of \$60,000. A new fertilizer factory is about completed, costing \$7000; a foundry is also in process of erection, the cost of which will be not less than \$5000. The Pepper Publishing Co. has been organized with capital stock of \$30,000, and is

employing 20 hands at present, with splendid prospects of an increase in the working force in the near future. A new folding machine and electric power have been already installed, and a magnificent press will soon be put in. A new furniture company has just been organized, which will be capitalized at \$50,000 and will begin operations the first of October. There is every reason to believe that East Florida Seminary, a military school with national reputation, will receive a large appropriation from the State when the legislature meets next spring of not less than \$125,000, to be applied to new buildings, etc. The appropriation was made during the last session of the legislature, and failed to be turned over to the trustees on account of a technical defect in the bill. A hospital board has been organized of our very best citizens, and plans are being made for a suitable building which will be a reality in the near future. Our city and county has no barrooms; our people are orderly, law-abiding and progressive.

B. P. RICHARDS.

Where Healing Waters Flow.

[Special Cor. Manufacturers' Record.]
The Business Men's League,
Hot Springs, Ark., August 13.

Hot Springs, Ark., is not a commercial or manufacturing city. With the exception of lumber mills, the healing hot waters are its only resource. Yet its remarkable growth in the past two years reflects not alone the prosperity of the Southwest, but of the whole country, as between 60 and 70 per cent. of its 125,000 visitors last year came from the northern half of the United States.

Within the past two years a round total of \$1,340,000 have been put into substantial buildings in Hot Springs, and \$550,000 have been expended by the United States government and private corporations in other directions in permanent improvements, and an additional \$400,000 is now being and about to be put into new enterprises.

The building operations in the main are as follows: One brick hotel, \$200,000; three smaller brick hotels, \$105,000; a brick and stone infirmary, \$80,000; City Hall and auditorium, brick, \$60,000; post-office, cut stone and brick, \$90,000; one five-story fireproof steel, stone and brick store and office building, the first fireproof building in the State of Arkansas, \$165,000; four other brick store and office buildings, three and four stories, \$140,000; 750 dwellings and smaller store buildings, estimated to cost not less than \$500,000.

The United States government has expended in the same time in mountain drive construction on its reservation, improvements in the hot-water service and bathing facilities, \$200,000. The street-car company, the lighting and water company in extensions and improvements still going on, and a new telephone company in construction and installation have expended \$250,000.

The Detroit Lumber & Timber Co. is about to erect a mill at Hot Springs costing \$150,000 and employing 300 to 400 men.

It is proper to add to the Hot Springs improvements the building of two high-class racing plants. A mile track was built last year at a cost of \$75,000. They are improving the track and grandstand this year and building a clubhouse at a cost of \$25,000. Another new mile-and-one-eighth track, grandstand and stables are being built this summer at a cost of \$250,000. The two tracks will accommodate 2000 horses, and will operate on alternate dates under the auspices of the Western Jockey Club. Hot Springs becomes at a single bound the winter racing center of the country.

C. F. CORLEY, Secretary.

\$3,000,000 Awaiting Investment.

[Special Cor. Manufacturers' Record.]

Chamber of Commerce,

Macon, Ga., August 9.

Macon, Ga., is situated at the head of navigation on the Ocmulgee river. Its existence is due to navigation on the river, but since railroad bridges were constructed across the stream, before the Civil War, there has been no traffic on the river between Hawkinsville and Macon. Congress a few years ago required the railroads to put drawbridges wherever they crossed the stream, and an appropriation of \$156,000 was made to clear the channel of accumulations. This money has been spent, the drawbridges made and the channel put in prime condition. Plans are now on foot to resume steamboat traffic above Hawkinsville, and \$3,000,000 awaits investment in new enterprises in Macon as soon as the boats begin. A list of pledges to this effect are in possession of the secretary of the Chamber of Commerce. It is estimated that \$500,000 worth of new enterprises and improvements are now being made in the city in the natural growth and development of the community.

Macon enjoys a two cents differential over other interior cities in the matter of eastern freight rates, and enjoys the same rate from Ohio river points as do other interior towns.

For years Macon did the largest wholesale business of any city of its population in the United States, and she is preparing, with the aid of her steamboats, to do even greater things in the future.

She has several manufacturing concerns that are considered the biggest of their kind in the world. Two of these ship more than 100,000 tons per annum. One of them ships nearly 200,000 tons per annum.

It is claimed that no city in the world distributes as much guano as Macon.

The Chamber of Commerce is composed of 150 of the leading business men in the city, and they work quietly but steadily in the effort to advance the city's material prosperity in every possible way.

EUGENE ANDERSON, Secretary.

No Mossbacks Permitted to Stay.

[Special Cor. Manufacturers' Record.]
The Blackwell Commercial Club,

Blackwell, Okla., August 9.

This is a city of 4200 inhabitants. Six years ago it had 500, but surrounded by a country unsurpassed for beauty, health and fertility. It was 14 miles from a railroad. \$24,000 was raised and given to the Hutchinson & Southern Railway (now a branch of the Santa Fe) to build here. In a year \$13,000 was given to the Frisco to build here, which forced the Santa Fe to build in from the north, thus giving us three railways. It brought manufacturing interests representing capital of over \$250,000. \$15,000 was then given to get the location of the Oklahoma State Baptist College, and \$10,000 more is being raised and will be collected in 60 days by our people to assist in paying the last dollar of indebtedness from the institution.

These subsidies have brought our population from 500 to 4200, given us more miles of brick and cement sidewalk than any city of its size west of the Mississippi river, good streets, water-works owned by the city costing \$40,000, and made this city a market for more than 2,500,000 bushels of wheat annually, and almost that much corn, with three banks with deposits of almost \$500,000. Sixty two-story brick and stone buildings and two three-story brick buildings and a large four-story hotel costing \$40,000 will be built at once. Being in the natural gas field, a large company of St. Louis capitalists have organized to construct and oper-

ate a brick plant, pottery works and sewer-pipe factory to cost \$200,000.

All this because Blackwell will not permit a "mossback" to live here.

Your paper has done a great work for all Southern cities. We attribute much of our success in securing foreign capital to the wide publicity given by you to our advantages. We want a strawboard and paper mill, glass factory and more wholesale houses.

W. C. TETTERICK, Secretary.

RAILROADS AND WAREHOUSING.

Support of Plans for Improving the Handling of Cotton.

Confirmatory of the views expressed by the Manufacturers' Record regarding the importance of the development of a broad cotton warehouse system, and the improvement of new ginning and compressing methods, we are permitted to publish the following letters from railroad men addressed to Mr. S. F. B. Morse of New York, president of the Southern Cotton Corporation:

A. Pope, assistant general freight agent Seaboard Air Line Railway, Portsmouth, Va.: I beg to say in the light of my experience of many years in railway traffic in the South, as well as the acquaintance thereby acquired with the conditions pertaining to cotton in its various physical and commercial phases, as well as of the mercantile and other interests collateral thereto, I am of the opinion that the methods proposed to be employed by your company, while not only practical, are so thoroughly comprehensive in all phases of treatment of that commodity from field to mill as to merit universal use and to become a factor in the prosperity alike of all concerned; that it should, while enlarging the material benefits derivable from so important a crop, likewise remove its commercial treatment from that arena of uncertainty as to values and returns, now so often surrounding it, and for the following general reasons:

1. That with warehouses judiciously placed in the beginning of the operation of the system in representative cotton-producing and marketing sections, representative of different areas of producing territory, and with an assurance to planters that the warehousing purposes defined will be adhered to exclusively, cotton will seek such protection, and by the educational methods of better baling employed that carelessness in form and character so generally existent, as well as that indifference in the care now often existing, especially with the planters, will be materially reduced and finally eliminated, while each warehouse, with its commercial machinery in operation for enabling advances, original ownership remaining unchanged, will relieve those necessities so often and widely present with the producer that subjects him to the penalties of fluctuation in market prices, from causes of which he is wholly and necessarily ignorant and beyond his control.

2. As cotton throughout the country in which produced or wherein dealt approaches more nearly a currency value than majority of other agricultural commodities, whatever tends to appreciate its physical condition and surround it with storage protection elevates its basis of value and causes it to be more acceptable collateral to banks.

3. The proposed plan should distribute the dealings therein of all classes over longer periods of time per annum, and, eliminating the fluctuating conditions of price, stimulated often by appreciative influences, the movement, either foreign or domestic, becomes diffused rather than concentrated, and it can be readily seen that such results tend to the benefit alike

of producer and consumer, and that the speculator becomes more a co-ordinate factor in the transactions rather than a dominating force.

4. The advantage to the transportation companies by said results is obvious, as avoiding congestion in movement, acute demands for service and all the expensive conditions of transportation incident to spasmodic and urgent demands for movement.

5. With the system referred to the planter, meeting the necessities for his operations by a gradual depletion of his crop rather than from the urgency often imposed upon him by his factor, extricates himself from the financial thralldom under which he often labors, and, conducting his future farming operations on a more methodical scale, distributes the purchase of his needed supplies more evenly throughout the year, and thereby enables the railways to enjoy their tonnage incident to cotton production more evenly throughout the year, all of which considerations appear to me as establishing arguments wholly in favor of the proposed methods.

E. L. Sargent, general freight agent Texas & Pacific Railway, Dallas, Texas: It is my opinion that you have taken a step in the right direction, and if you can accomplish a fourth of your desires, as set forth in the circular, it will cause a revolution not only in the marketing of the crop, but also by the handling of the railroads. It would certainly seem that every cotton factor and handler, as well as those interested in the crop, should lend you a helping hand in the good work you are starting to accomplish. I wish you all the success in the world in your efforts.

Cotton-Handling Facilities.

Mr. A. G. Campbell, president of the First Natchez Bank of Natchez, Miss., writing to the Manufacturers' Record, says:

"The facilities for handling cotton at all of the prominent points in the South are very good, and the Southern banks are now in position to carry any amount of cotton that the buyers or planters wish to store and borrow money on, and I believe this business can be better handled by the individual in connection with his banker, warehouse or compress locally than by any other plan that could be devised. You are no doubt aware the South has made a great deal of money in the last few years, and is in much better position to finance the cotton crop than we were several years ago, when the warehouse scheme was first suggested."

Good Cotton Prices Help Building.

D. B. Woodruff, architect, Macon, Ga., writes to the Manufacturers' Record as follows: "As the cotton crop is the chief industry of our people, the money-getter, it follows that a high price for the staple improves conditions all along the line. There is an increased activity in building operations, which is more marked in the country perhaps than in the cities. County courthouses, churches and school buildings are going up everywhere. The fruit crop, which is just about harvested, is something enormous this year, taking about 4000 railroad cars to handle it in this State, all of which has brought large remunerative prices and will farther stimulate our people for better homes and better surroundings. I think the prospects are very bright for better things."

The petroleum production of the United States in 1903 was 100,461,337 barrels, against 88,766,916 barrels in 1902, California showing an increase of more than 10,000,000 barrels and Texas a decrease of more than 1,000,000 barrels.

FOR ECONOMICAL POWER.

An Engine Without Boiler or Furnace, or Evidence of Heat.

[Special Correspondence Manufacturers' Record.]

New York, August 16.

Among the jokes aimed at St. Louis which Chicago papers used to publish, I remember once of having read a story to the effect that when Adolphus Busch, the great brewer of St. Louis, registered at some European hotel he was asked by some one not familiar with American geography as to the location of St. Louis. Busch's reply, according to this story, was, "St. Louis is next to my brewery." As Busch is said to have an income of some \$3,000,000 or \$4,000,000 a year out of the vast brewery interests which he owns, and is estimated by some to be worth \$40,000,000 or \$50,000,000, several million of which, by the way, are invested in the South, his pride in his vast brewery is probably justified, but Mr. Busch has cause now for pride far beyond that justified by his phenomenal success in St. Louis. He has cause now to take pride in having for years patiently invested his money in an undertaking which some of the most noted experts of the world say is to make a complete revolution in the economical production of power. As every reduction in the cost of power increases the world's wealth and extends the field for advancement in manufacturing, in electricity, in railway work, all tending to the betterment of the conditions under which humanity labors, Mr. Busch in the development of the Diesel engine has an enduring monument worthy to rank beside that of the men who have perfected this engine for which he and his associates have provided the capital. Its relation to the business world is of vast importance, but it touches especially the South, and it is from this point mainly that I have been considering it as its possibilities have been outlined to me by Col. S. F. B. Morse, president of the Southern Cotton Corporation. As Mr. Morse is one of the recognized railroad experts of the country, his views on the importance of this engine, in connection with plans looking to the enrichment of the South, and the development of improved methods of cotton handling are of particular interest. In following up the discussion of improvements likely to be introduced by the Southern Cotton Corporation, as mentioned in a recent issue of the Manufacturers' Record, Colonel Morse said: "Associated with the plans of this company are men who are identified with the development of one of the wonders of this age, the Diesel engine. This wonderful new source of power is an internal combustion engine; that is to say, it burns crude or fuel oil or any other liquid fuel inside of the cylinder of the engine, and immediately transforms the energy developed from such combustion into power upon the engine shaft. The combustion being inside of the cylinder, is not exposed to the open air, and by the time the exhaust opens to the atmosphere all combustion has ceased and nothing comes forth from the engine except the warm air of exhaust, into which is injected a small amount of water. We have then here an engine without boiler or furnace, and without any evidence of heat, and, what is most remarkable of all, with a consumption of fuel of only one-half pound for each horse-power hour developed.

"It is in the South that this new source of power may find a great field of usefulness. To any student of economic development the importance of cheap and easily available mechanical power grows more and more important as invention steadily replaces labor with mechanism. In the

Diesel oil engine we have at once the most economical and the most easily distributed power, combined with other advantages, which seem to make it particularly adapted to Southern wants. So economical is it in the utilization of the heat energy of the oil that it consumes that the heat wasted in the exhaust is practically a negligible quantity. In the South, where there can be no use made of exhaust heat, the engine presents to the user all the available heat energy in the form in which it can best be used, namely, power. Another one of the striking characteristics making this engine ideal for the Southern States is the fact that it will give its maximum and unrivalled economy even in small units, so that the cotton ginner with his 50-horse-power plant can rival in economy the largest and most expensive steam-power plant. Power-users will appreciate also the enormous advantage in the Southern States of having an engine free of all troubles arising from conditions of water, or, in other words, an engine requiring neither boilers nor condensers. The Diesel engine can be shut down today and started up six months hence on five minutes' notice; no drawing of fires, no cleaning out of boilers, no inspection, no leaky tubes, incrustated or corroded plates; in fact, complete freedom from all the most annoying troubles connected with steam-power. There are no pressure gauges to watch, no water-levels to keep up, no vacuums to maintain, therefore a very moderate amount of skill is required. In making repairs, of course, good mechanics are needed, but for the operation any trustworthy laborer may be available."

As stated by Colonel Morse, "this engine burns crude oil of any description. The South would therefore be independent of the refineries of the North, and could use the oil direct as it comes from the well. With oil at \$1 per barrel, the oil cost per day of 10 hours for a 50-horse-power engine would be less than \$1, and the labor cost would be practically nothing, as, after starting the engine, the operator can engage himself in other work for the rest of the day. A steam engine of the same capacity would consume not less than one ton of coal per day, costing perhaps \$4, and would require practically the continuous attention of an engineer, costing perhaps \$2, thus making a charge of \$6 for power for what the oil engine accomplishes for \$1, to say nothing of the savings in boiler repairs.

"Another thing that seems to me particularly attractive about this form of power in connection with the cotton industry is that there is no fire about it. So that in connection with this engine there may be said to be no fire risk, a fact that is bound to favorably influence insurance rates. What the South wants is to grow more mechanical, and nothing will tend more to bring about such growth than the introduction of a cheap form of power, particularly suited to its various needs. In its cotton mills, its oil mills, its power plants for pumping water, developing electricity and public utilities generally, the Diesel engine makes economically feasible enterprises which, were dependence placed on steam and coal, could not be possible. Small settlements which have not heretofore considered themselves large enough for gas, electric light or water plants, may, by availing themselves of this simple form of motive power, become possessed of all the advantages of the larger cities. Electric railways and lighting plants that are now using steam in wasteful form may be

turned from non-paying into profitable enterprises by the substitution of this power.

"Indeed, it is believed that this power will soon invade the field of transportation in our merchant marine, as well as our railways. Steps are being taken to make use of this engine as a power for propelling vessels. Picture for a moment the effect upon cotton transportation that the equipment of such a sailing vessel as

the schooner Thomas W. Lawson with auxiliary power that would enable it to take 20,000 bales of cotton from Galveston to Liverpool or Boston and deliver them on scheduled time—a power which would infringe in no way upon the cotton-storage space of the vessel nor interfere with its efficiency as a sailer. Here again the absence of fire becomes most important."

THOMAS P. GRASTY.

Why Ten Cents Should Be the Minimum for Cotton.

Col. S. F. B. Morse's View as to Permanently Fair Prices for the Staple.

By THOMAS P. GRASTY.

[Written for the Manufacturers' Record.]

Col. S. F. B. Morse, who, while a member of the firm of Daniel J. Sully & Co., got together the cotton data upon which the memorable bull campaign of last year was based, and who thus was the main-spring in the movement that almost doubled the income of our Southern farmers, is as firm a believer now as he was then that fair prices to the grower must continue to prevail. He does not, however, consider excited speculation and appalling fluctuations as the right means for the attainment of the end desired. His contention now is that the South is able and ought to, through the use of legitimate business methods, secure permanently fair prices from the world's spinners for a product which is essentially a natural monopoly.

Commenting on the masterly discussion of the question "How to Maintain a Fair Average Price for Cotton," by D. A. Tompkins, in last week's Manufacturers' Record, taken in connection with a recent review of cotton conditions from a British point of view, Colonel Morse said: "The business brains of the South have now within reach every necessary facility for the prevention of any recurrence of starvation prices for the South's great staple without having to invoke the aid of speculative forces of any sort or kind. It is a purely business proposition to determine cotton values by averaging the prices of preceding periods and estimating the increasing necessities of the world. From a careful study of statistics and a conservative estimate of expansion in consumption, it is my opinion that 10 cents per pound is the minimum price the South should make up its mind to take for its cotton year in and year out, so long as it holds a virtual monopoly in cotton production. That this can be done by a comprehensive warehouse system and an abatement of existing evils in handling is admitted by all business men and bankers who have given to this subject their honest, earnest thought."

In view of the almost absolute accuracy of Colonel Morse's estimates of last year's crop, and that of the three preceding years, I asked him to give the Manufacturers' Record his views as to the crop now about to be harvested. "It is too early," he replied, "for anyone to form a definite opinion. Any estimate made now must necessarily be based on impressions rather than upon opinions, though there are several conditions surrounding the growing crop which have already become clearly apparent to all careful observers. Notable among these is the gradual deterioration in soil, the apparent degeneracy of seed virility and the increasing exhaustion of efficient farm labor. Making the most moderate allowance for the consequences of these three elements of contraction, and leaving other drawbacks out of the calculation, a crop of 11,250,000 bales is the maximum to be expected. How far this maximum may be reduced by un-

seasonable weather, early frosts and the increasing depredations of the boll-weevil and other insect enemies it is as yet impossible to foretell. But, for the sake of argument, let us figure on the possible maximum not only for this season, but for the next two or three years. It is my contention that, by virtue of the constant expansion in the world's requirements and the fact that there is no substitute for cotton, and in view of the encroachment on manufactured reserves due to recent short crops and the exhaustion of reserve raw material, it would take every one of these 11,250,000 bales (i. e., the maximum crop) for at least three seasons to restore a normal parity in the relation between raw material and manufacture. In support of this contention I may quote from the first of a series of articles on the cotton requirements of Great Britain, now being published simultaneously in the New York Times and in the London Times, the following paragraphs:

"1. Stated in a single sentence, the present position amounts to this: The world's supply of cotton is no longer equal to the world's demand.

"2. The estimated yearly increase in the demand is put at from 400,000 to 500,000 bales, and not only is the present production inadequate, but in another 10 years an additional 5,000,000 bales may be required. Lancashire's shortage for the past year or two may be put at 1,000,000 bales."

"For the foregoing reasons, coupled with the fact that the South is in a position of greater independence than heretofore for the exercise of a sound discretion in marketing the coming crop, with means at hand for holding whatever cotton it may be considered desirable to keep off the market, my deliberate conclusion is that the South is abundantly able and ought to fix as the minimum price for the first movement of this season's cotton 10 cents a pound. By doing this our planters, merchants and bankers will be in a position to get the benefit of any rise due to climatic or other conditions which may be developed while the crop is being picked."

New York, August 17.

With 10 counties yet to report, the tax returns of Georgia show assessed valuation of \$455,273,333, a gain over 1903 of \$22,047,201. Decreases are reported from only nine counties, and their aggregate is \$231,259.

Government engineers in charge of reclamation work for the Rio Grande valley at El Paso are studying the possibilities of catching the underflow of the river and utilizing it in irrigation.

Seventeen ships of the Canadian Pacific Railroad Co. will enter the Gulf trade this fall, loading at New Orleans and Galveston.

A GREAT ORE FIELD IN ALABAMA.

[Special Correspondence Manufacturers' Record.]

Birmingham, Ala., August 10.

The mention of the gray-ore property east of this district, which is controlled by a syndicate of Baltimore and Birmingham parties, has excited a good deal of interest, because it is based on tests that have run more than a year. During this time neither expense nor labor has been spared to give the ore a thorough test. It has been tested in the laboratory, and it has been tested through the furnace. As it progressed through both it met the requirements of both theory and practical demands, and when requirements were verified by results there was no longer any question as to the value of the property. It fixes for a long time, and you might say for a very long time, the question of iron-ore supply for the Eastern Alabama furnaces, and they are so conveniently situated to it that the question of freight cuts but a small figure in obtaining the supply. The attention of Milton H. Smith was directed to it several years ago, and it excited his personal interest to the point that he went in person to examine the property, taking with him the most prominent expert in the district. The property was thoroughly explored, and it was estimated that on parts of it the amount of ore to the acre would run as high as 95,000 tons. When your correspondent went over to see the face of the veins he found that they were 28½ feet wide, and that the amount of ore property was beyond compare. In many flocks of cattle there are always some that are lean and some fat. It is so in iron ore. It don't always pan out alike. There are lean places and there are fat places. There are enough fat places on this property to make the lean places seem insignificant.

From one point of view the development establishes the fact that the supply of ore for the eastern part of the State for many years to come is assured. The amount of ore in sight is one thing and its quality is another thing. In this particular case both quality and quantity have been confirmed, and one wonders that the developers of the ore mines of the State gave this property the go-by; but it is not the first instance where the rejected cornerstone became the foundation stone of the building. Your correspondent has seen analyses from the veins cut on this property, and can say that the recent development of the gray-ore property, owned by Col. T. G. Bush and associates, has brought into the Southern ore situation a new supply of far-reaching consequences.

Along the line of the A. & C. Railroad are located eight furnaces which have drawn their ore from the uncertain pockets lying near the edge of the Cambrian measures. For years this source of supply has been depleted until the ore near the railroads has become scarce, except at great depth, and the consequent exceedingly high cost resulted in not making it desirable when pig-iron touches \$10, as now is the case. The importance of this development is realized when we recall that none of these furnaces ran for years during the depressed period of the nineties, although those of the Birmingham district kept alive even with iron selling under \$7. The milk in the coconut, furnaces based on stratified ores ran when those on pockets could not. These gray ores are stratified, hematites, metamorphosed by pressure and heat, when the upheaval of the upper Archæan and Cambrian measures took place through the eastern counties of the State, throwing the waters to the Gulf or the Atlantic. While the ore is denser and consequently harder than the fossil hematites of Birmingham, the cost of mining is not greater at the lower

levels, mainly because the gray ores crush or grind readily under the stroke of the drill, while the hard fossil inclines to pack. These ores are in supply sufficient to care for all this set of furnaces indefinitely during continuous operation so soon as sufficient development is had. This field was first exploited by Mr. Samuel Noble, but its true worth and merit was not demonstrated until years after, when Sloss Brothers, with persistent effort, proved their theory of stratification. To the great Southern iron business is added a safe supply of ore for all furnaces in East Alabama heretofore relying on the pockets.

As to the ore in sight in these gray fields, computation hesitates to venture a prediction. There are 1800 acres in the tract. If 100 acres sustained the calculation of the eminent expert who figured out results, this 100 acres would easily yield around 10,000,000 tons.

That a very important new field of ore is in process of development is unquestioned, and it is equally certain that its importance and value will increase as the years roll by. It is an accepted fact here that 50 per cent. ore with silicon at 22 per cent. is a high-class ore, and the gray-ore fields will carry this. Time will prove this field to be a most important factor in the making of iron in this State. It will put new life into languishing conditions and be a dominant factor in the cost of iron in this section, and it can safely be added that the ore will be in general demand as facilities for delivery are increased.

J. M. KENNARD.

THE BIRMINGHAM DISTRICT.

Labor Troubles to Be Settled in Its Best Interests.

[Special Cor. Manufacturers' Record.]

Birmingham, Ala., August 15.

The all-absorbing question in this district now is the strike which was lately formulated through official channels. So far everything has been within the limits of law and order. But the order of United Mine Workers has already established a commissary and is issuing rations to those members who are loyal to the order and who decline to work except upon the terms dictated by the order. The furnace operators, in the meantime, decline to recognize the order in any official way, and have posted notices that their mines are open to efficient labor, regardless of unions. Your correspondent has never seen them so determined upon their course as they are at present. The exactions of labor have been so often without just cause that it became necessary to resist them. The question finally drifted to the one of being controlled by the miners or controlling their own property. This is the question at issue. The operators are taking steps to bring labor from other districts. Three companies have already engaged 500 laborers from other fields and have apportioned them out among themselves. They are laying their plans to secure more labor as circumstances may prompt. That they can secure it there is little doubt. The fact is, they are offered 5000 to 7000 laborers from other fields. But they want to give their old employees the preference, and have given them until the first of September to accept their offer to resume work. At that time, if the offer is declined, evictions will follow and the houses of the various companies will be turned over to the imported labor.

The usual number of mines are in operation, but they are not turning out the normal output of coal. Some have just enough labor to keep the mines in order and in a condition for operation, while there are others, running as open mines,

that are getting out their usual output. The Oxmoor furnace has started up again, receiving its coke from Southwest Virginia, and the furnace at Battelle is ready for the torch, and is liable to start at any time.

As to the iron market, there is a better feeling, and prices in some instances have been advanced and obtained. There was a sale of 800 tons of No. 1 soft at \$10, and a sale of No. 1 foundry at the same price. There were also sales of No. 2 foundry at \$9.50, as well as some at \$9.25, and covering deliveries into the first quarter of 1905. There were sales of No. 3 foundry at \$9.25, and there were sales of No. 4 foundry at \$9, as well as sales of gray forge at \$8.75. The latter sold as low as \$8.50. But it was what might be called a chance sale. The low grades are in scarce supply, and some sales in limited quantities were made at above quotations here given. But they do not constitute the market. There were no large sales, and there were no large inquiries. The difference in price between this section and the Western supply markets is so decidedly in favor of the latter that we cannot hope for orders of any magnitude until there is an advance in the latter. And when the advance comes we won't have the iron.

The rolling mill at Bessemer is in operation, and is being conducted as an open mill. The feeling is that in this district the day for dictation on the part of union labor has passed. If there is any success in opposing its demands the opposition to its encroachments will rapidly increase, and the time is near at hand when those who furnish the capital for industrial enterprises will have a potential voice in their management.

As evidence of the improvement in affairs here, the record shows that in the last four years 9500 houses have been erected at a cost of nearly \$14,000,000, and in spite of the discouraging aspect of the mines, big things are being considered. Our labor troubles will be settled in the interest of the district, and we will enter then upon a new era of prosperity.

J. M. K.

Alabama Operators Strengthened.

[Special Dispatch to Manufacturers' Record.]
Birmingham, Ala., August 16.

As matters stand tonight the operators have received additions to labor in their mines, and there is a manifest crumbling away of opposition and a growing feeling to accept the terms offered and go to work. This is not general, but every day sufficient defections occur to indicate the trend of feeling. The trouble is the miners can't determine to rebel, and the process of rejecting the advice and orders of their leaders must be of slow growth. The latter are financially able to prolong the contest, and will do it as long as they are backed by treasury funds, but it is plain now that the operators have the best of the fight, and will hold their advantage. Labor from other districts is being offered freely, and it will be as freely accepted. September 1 will see the backbone of the strike broken and affairs of the district again at their normal conditions. There is absolutely no change in the iron market.

J. M. K.

The Pig-Iron Market.

Matthew Addy & Co. of Cincinnati in their weekly report say:

"The pig-iron situation has improved. From extreme apathy and general hopelessness there is a fair degree of activity and a feeling that the worst has passed. Sixty to ninety days ago consumers were filled with the conviction that pig-iron prices would keep on declining indefinitely; in fact, they felt there was no bottom. This sentiment now has disappeared.

Consumers themselves are getting more business, and as a consequence there has been some considerable buying of pig-iron. Prices on the lower grades of Southern iron have been advanced. These grades are in exceedingly short supply, and there has all along been relatively more demand for them than for the higher grades. In other directions prices are firm.

"Coke has been selling much more freely than at any previous time for a year. It is a significant sign of the times that coke contracts are now being made for far ahead shipment. For months and months coke has been bought in a hand-to-mouth style, buyers being afraid that prices would go down over night. That they are now purchasing for shipment as far ahead as the ovens are willing to sell shows a decided change of sentiment.

"The outlook for a very decent fall business is good. Nothing of a phenomenal nature is expected, but we are certainly surely, even if slowly, getting back to a normal state of affairs."

TEXAS OIL SHIPMENTS.

August Movement Stronger Than That of July.

[Special Cor. Manufacturers' Record.]
Beaumont, Texas, August 14.

Complete reports of shipments of Texas oil for the month of July indicate that the daily movement was about 51,000 barrels, exclusive of field consumption. The estimate of 57,000 barrels a day made on August 1 was based on the presumption that Sabine shipments during the latter part of the month would hold up to the average of 16,000 barrels a day maintained during the first two weeks of July. It appears from the records that no oil was shipped from Sabine after July 17 until August 6.

The port shipments for July were: Port Arthur, 715,767 barrels; Sabine, 273,429 barrels—total, 989,196 barrels. Of this amount about 615,000 barrels were crude, the balance being gas oil and refined oils. The average of all port shipments was 31,910 barrels a day, and of all rail shipments 19,000 barrels a day, or 509,000 barrels for the month. Production averaged about 43,500 barrels a day, or 1,348,500 barrels for the month. This indicates a shortage of 249,500 barrels for the month, not counting the field consumption, of which no record is obtainable, but which amounts to 8000 barrels a day, or 248,000 barrels for the 31 days. The actual shortage for the month of July, therefore, was not far from 500,000 barrels.

The movement for the first two weeks of August has exceeded the July shipments. From the 1st to the 13th Port Arthur shipped 303,250 barrels, or an average of 23,327 barrels daily. From the 1st to the 10th Sabine shipped 152,430 barrels, or an average of 15,243 barrels daily. The average daily movement from both ports was 38,570 barrels, basing the calculations on the records within the periods stated. Rail shipments were as follows:

Southern Pacific—Sour Lake, 625 cars to and including August 12, or a daily average of 14,000 barrels, figuring 270 barrels to the car; Gladys (Spindletop station), 47 cars to and including August 10, or a daily average of 1100 barrels, figuring 240 barrels to the car; Beaumont, 19 cars to and including August 11, or a daily average of 415 barrels, figuring 240 barrels to the car; Jennings, 85 cars to and including August 11, or a daily average of 1855 barrels, figuring 240 barrels to the car.

Santa Fe—Saratoga, 281 cars to and including August 13, or a daily average of 4323 barrels, figuring 200 barrels to the car; Beaumont, 24 cars to and includ-

ing August 13, or a daily average of 370 barrels, figuring 200 barrels to the car.

The foregoing figures indicate an average daily movement by rail from the Texas fields of 20,208 barrels. Added to the port movement, this gives a total average movement of Texas oil amounting to 58,778 barrels. Including the Jennings movement, the daily shipments, based on the records for the periods above stated, from Texas and Louisiana points, excepting shipments via the Kansas City Southern, which are not available, have averaged 60,633 barrels.

The situation in the Texas fields as regards production has shown no important change this month. Sour Lake is improving in production, and is now credited with 15,000 barrels a day. Batson remains about the same, with an average of about 22,000 barrels a day. Spindletop has dropped off to about 5500 barrels. The Nelson (Beatty) well, which came in flowing in the latter part of July, quit on the 12th inst. It made as much as 600 barrels in a day. Saratoga is credited with 2000 barrels a day. These figures indicate a total production in the Texas fields of 44,500 barrels daily.

The most important developments of the present month have been in the Jennings (La.) field. On August 4 the Producers' Oil Co. brought in its No. 4 well on the Latreille tract. It started off at a 5000-barrel-a-day clip, and at last accounts was making 4000 barrels a day. This well is located 500 feet south and east of the previously proven territory, and it has attracted the attention of the Texas producers to the extent that one large company and one syndicate have already secured leases from the Jennings-Heywood Oil Syndicate on property near the gusher and will develop immediately. Jennings has been doing about 5000 barrels a day. The new production recently obtained, including some wells in addition to the producers No. 4, has swelled the daily output beyond 10,000 barrels. The report of shipments indicates that the railroad is moving from 1800 to 2000 barrels a day. Considerable oil is also going out by barge on the Mermentau river and the bayous, but more than half of it is going into storage. There are three pipe lines leading from the field.

George S. Davison, the new general manager of the J. M. Guffey Petroleum Co., succeeding George L. Craig, resigned, will arrive in a few days to assume the duties of his office. Mr. Davison will make his headquarters in Beaumont. The Gulf Refining Co., associated with the Guffey Company, is preparing to install distributing stations in Houston and in points in West and North Texas, from which the trade in the various sections of the State will be supplied with the products of the big Gulf refinery at Port Arthur, one of the largest independent plants in the country. The Gulf Company now has distributing stations at New Orleans and at Tampa, Fla., and in the North at Bayonne, N. J., Philadelphia and Beverly, Mass. It also has a crude-oil station at Gretna, La., on the Mississippi river, opposite New Orleans. The Gretna station was formerly the Healy plant.

HOLLAND S. REAVIS.

ITALIANS FOR THE SOUTH.

View of a Philadelphia Paper Published in Their Tongue.

Il Vesuvio, the Italian newspaper of Philadelphia, which is taking such an interest in the movement of Italians to the South, in a recent issue devoted much space to a review of the Manufacturers' Record's study of that question, and it adds:

"If our fellow-countrymen, instead of wandering around in search of work which

seldom or with difficulty succeeds, directed their steps to the South they would immediately find an easy and profitable occupation, through which they could in a short time gain enough to enable them to live independently.

"It is now an established fact that the Italian workman is sought for and appreciated throughout the southern portion of this country, because it is known how much he is worth and how much can be calculated upon the Italian cultivator who devotes himself to agricultural production.

"It should be our desire to see the Italians beloved and respected in this country, which presents such various resources. And a way to make yourself respected is to make yourself known for just what you are, by showing yourself indispensable in the cultivation of the immense lands which hold in themselves both individual and general prosperity.

"Families who have been established in the United States for many years have little by little attained a position to be envied, and possess great tracts of land, upon which they raise every kind of product, and to an extent that enables them to live in ease and comfort. Some say that America is no longer the same as formerly; that work is not as profitable as it once was; that only the workman is needed now, and that at a very cheap price. But if these, instead of tramping along the streets of cities, would apply to the immigration officers and would ask for suitable employment for their hands, they would find that this country is precisely the same as it was, and that it is still able for a long time, one might say, for all time, to give riches to him who knows how to seek them.

"Under date of July 26, in a letter congratulating us for our comment on his article in the Manufacturers' Record concerning Italian colonies in the South, Mr. Lee J. Langley says:

"The South indeed has need of work, and the negroes, who now, and for many years past, have constituted our principal laboring contingent, are becoming year by year more deficient, due probably to what may be called the paradoxical condition of being prosperous but unambitious, on account of their peculiar nature and disposition, to increase their success when confronted by most ample opportunity to do so. Add to this that they have some political friends, of such a distinct reputation, that in the end they turn out to be their worst enemies. There are cheap lands in the South and many agricultural and industrious advantages which present to your people the rare opportunity of establishing themselves as proprietors, owning their land, building their houses and becoming equal to every independent citizen of this country. I have written many articles on the same subject as the one reproduced by you, all to the credit of the Italian, and I have no motive not to suggest to a people who merit it the occasion for establishing themselves in their own houses, surrounded by lands of their own ownership sufficient to make them and their children independent, no less than to give the southern portion of the United States a decent white population which would cultivate the soil and people the cities."

"Thus he writes us, adding that he intends to conduct some hundreds of Italians into Mississippi and Louisiana, with the aid of some friends who will furnish means of transport, and who will also help them to make a beginning and establish themselves.

"Why, then, will not our Italians take advantage of the occasion. It is a true friend of the Italians who speaks, and it is one of those who wish to see the posterity of our people in this grand republic."

TECHNICAL EDUCATION.

By J. C. MONAGHAN.

[Written for the Manufacturers' Record.]

Wherever one turns today the importance of technical education is in evidence. I picked up a daily paper today and took from it the following, clipped from a great magazine, the *Fortnightly Review*:

"The greatest force which is working for the future welfare of Germany is her intellectuality. The systematic thoroughness with which everything is carried out in the world of intellect is almost inconceivable. When anyone has been compelled for years to make use of German books, he will begin to realize the immense labor which has been done by Germans in the organization of knowledge. From his earliest years the German youth, whatever degree of learning he may eventually be meant to attain, is at any rate taught to learn systematically. He is never permitted to specialize in any subject until he has a complete grasp of generalities, in order that he may have in his mind at least a sense of the proportion of what he has to learn. The schools are also systematized, and fall into two strictly demarcated categories, the *Realschulen* and the *Gymnasien*; in the former are taught chiefly the natural sciences somewhat as in the modern sides of English schools; in the latter the principal subjects of instruction are Latin and Greek, but the student is in all cases compelled to go through a preliminary general curriculum. By the time the young man goes to the university his knowledge will probably be already very extensive; he at all events has his mind thoroughly ordered, and knows in what particular receptacle to classify all subsequently-acquired information. His studies are never allowed to proceed haphazard. In the higher walks of scientific research the same methods are pursued. Many of the universities have at their disposition very considerable sums for bestowal in the form of prizes for the furtherance of original scientific work. This patrimony is very carefully administered, and subjects suitable for research and requiring elucidation are pointed out to the competitors in order that none of the precious store of energy need be expended in vain. This system of education looks very perfect upon paper; we have already shown what are the evil effects of overintellectualization. The Germans have certainly hit the mean, as far as it is feasible to hit a mean between first-rate intellectual development and a degree of volitional energy indispensable to render that intellectual development fertile.

"A few words will show what immense services have been rendered by the Germans in the systematic classification of knowledge. The very names of books have received a technical significance quite unknown in other countries. To the German mind, for instance, the word *encyclopadie* represents something quite different from the alphabetical agglomeration of facts which we usually associate with the term *encyclopedia*. Such a work would be called a *Konversationslexicon* or *Reallexicon*; the *encyclopadie* is something quite apart. If you wish to study a science, the first book you must lay your hand on must be its *encyclopadie*. It will not necessarily be a big book at all, and it is not the place in which to seek for minute details or knowledge, but by means of it you will get a grasp of the ground which your particular science covers; you will get an idea of its organization, its divisions, its system; you will get a summary view of the whole science, so that you will know exactly how far it has been carried and what there is for you to learn. All this is implied to the German by the word

encyclopadie. Should you wish to pursue your studies further, you will have to purchase a *Grundriss*; this will take you over the same ground again, but will give you much fuller detail; it will, above all, give quotations from the original sources, from the great books on the subject, together with the fullest bibliographies, whereas the *encyclopadie* has only given select bibliographies. The next books are the *Lehrbuch* and the *Handbuch*. The former is a yet further expansion of the *Grundriss*, especially destined for the use of the student; the latter a complete compendium of the science, for the use and reference of the specialist. You have now made yourself a thorough master of your subject by dint of assiduous labor on this organized system, but you will still require to be kept au courant of the subsequent progress in your study. Your *Handbuch*, in spite of frequent new editions, will be a little behind the times. To combat this drawback the Germans have devised yet another instrument. This is the *Jahrbuch*, the triumph of German scientific methods. As the name implies, these books appear annually. They are edited by the most competent authorities upon the subjects with which they deal. Let us consider, for example's sake, a *Jahrbuch* on botany. Its internal classification will be arranged upon a system which has already been inculcated on the student in the *encyclopadie*, so that in turning over its pages he will not have a moment's hesitation as to what particular section will contain the information of which he is in search. It is the object of the *Jahrbuch* in question to enregister everything that has been done during the preceding year with regard to botany. Every fresh discovery is noted, every periodical article dealing with botanical questions or researches is carefully recorded, every book which has been published during the year is given, very often with the fullest critical notes. Nothing which has appeared in any country relating to their particular subject can for a moment elude the vigilant eyes of the compilers of the *Jahrbuch*. It needs no keen insight to see what invaluable services this work may render to the writer upon botany or to the scientific investigator himself. The writer is sure of having absolutely the latest and most accurate information concerning the matter of which he is writing; the scientist can assure himself that he is not frittering away his time in researches which have already been worked out to a successful or unsuccessful result by another. Even if the *Jahrbuch* be only looked upon as a saver of time, an economizer of labor, it would be hard to overrate its value. Every science has its *Jahrbuch*. There are *Jahrbucher* on Teutonic philology, on oriental philology, on ancient philology, on modern history; there are *Jahrbucher* on almost everything; some of the series cover many years, some are of only recent institution. But it is certain that the German scholar in quest of the most up-to-date literature on his particular specialty can really not be nonplussed in his search. If he wants to know what the latest traveler has had to say upon the obscurest Tungusic dialect, spoken somewhere almost out of ken in the wilds of Siberia, he can find it within the minute, so long as his *Jahrbuch* is within his reach. So, too, the doctor, interested in malaria, can discover, with mechanical ease, the latest specialist literature on his subject."

A friend who knew I was reading up on educational matters referred me to a series of discourses delivered away back

in the nineties by Professor Huxley before various English educational bodies. After reading the extract cited above I went back to the *Review* and then to Huxley, only to find that the great scientist had anticipated every thought, word and deed of Mr. Reich and of many of the great leaders in German education. Then I began to wonder whether American readers would prove as hard to move as Englishmen had proved to Huxley. In his lecture on "A Liberal Education, and Where to Find It," Huxley has crammed more of the science and sense of education into a small space than has any writer I have read from in a great many years. He says: "Suppose it were perfectly certain that the life and fortune of every one of us would one day or other depend upon his winning or losing a game of chess. Don't you think that we should all consider it a primary duty to learn at least the names and the moves of the pieces, to have a notion of a gambit and a keen eye for all the means of giving and getting out of check? Do you not think that we should look with a disapprobation amounting to scorn upon the father who allowed his son or the State which allowed its members to grow up without knowing a pawn from a knight. Yet it is a very plain and elementary truth that the life, the fortune and the happiness of every one of us, and more or less of those who are connected with us, do depend upon our knowing something of the rules of a game infinitely more difficult and complicated than chess." I wish I could coax every man in the South to secure a copy of these discourses of Huxley. They are the quintessence of pedagogical wisdom; they are the concentrated common sense of the science of education; they are the best thing I have seen on the subject anywhere; they are a veritable gold mine for those interested in the right kind of education. First, last and all the time they are emphasizing and insisting upon the importance of that kind of an education that secures the very best results of all our opportunities. Note the following passages:

"This was the theory of the middle-age university and the design of collegiate foundations in their origin. Time and circumstances have brought about a total change. The colleges no longer promote the researches of science or direct professional study. Here and there college walls may shelter an occasional student, but not in larger proportions than may be found in private life. Elementary teaching of youths under 20 is now the only function performed by the university, and almost the only object of college endowments. Colleges were homes for the life-study of the highest and most abstruse parts of knowledge. They have become boarding schools in which the elements of the learned languages are taught to youths.

"It is generally acknowledged that both Oxford and the country at large suffer greatly from the absence of a body of learned men devoting their lives to the cultivation of science and to the direction of academical education. The fact that so few books of profound research emanate from the University of Oxford materially impairs its character as a seat of learning, and consequently its hold on the respect of the nation. Cambridge can claim no exemption from the reproaches addressed to Oxford.

"I believe there can be no doubt that the foreigner who should wish to become acquainted with the scientific or the literary activity of modern England would simply lose his time and his pains if he visited our universities with that object. And as for works of profound research on any subject, and, above all, in that classical lore for which the universities profess to sacrifice almost everything else,

why, a third-rate poverty-stricken German university turns out more produce of that kind in one year than our vast and wealthy foundations elaborate in ten. Ask the man who is investigating any question profoundly and thoroughly, be it historical, philosophical, philological, physical, literary or theological, who is trying to make himself master of any abstract subject (except, perhaps, political economy and geology, both of which are intensely Anglican sciences), whether he is not compelled to read half a dozen times as many German as English books? And whether, of these English books, more than one in ten is the work of a fellow of a college or a professor of an English university?

"Imagine how much success would be likely to attend the attempt to persuade such men that the education which leads to perfection in such elegances is alone to be called culture, while the facts of history, the process of thought, the conditions of moral and social existence and the laws of physical nature are left to be dealt with as they may by outside barbarians.

"It is not thus that the German universities, from being beneath notice a century ago, have become what they are now, the most intensely cultivated and the most productive intellectual corporations the world has ever seen.

"The student who repairs to them sees in the list of classes and of professors a fair picture of the world of knowledge. Whatever he needs to know there is some one ready to teach him in the way of learning; whatever his special bent, let him but be able and diligent, and in due time he shall find distinction and a career. Among his professors he sees men whose names are known and revered throughout the civilized world, and their living example infects him with a noble ambition and a love for the spirit of work.

"The Germans dominate the intellectual world by virtue of the same simple secret as that which made Napoleon the master of old Europe. They have declared *la carrière ouverte aux talents*, and every *Bursch* marches with a professor's gown in his knapsack. Let him become a great scholar, or man of science, and ministers will compete for his services. In Germany they do not leave the chance of his holding the office he would render illustrious to the mercies of a hot canvass and the final wisdom of a mob of country parsons.

"Now, the value of a knowledge of physical sciences as a means of getting on is indubitable. There are hardly any of our trades, except the merely huckstering ones, in which some knowledge of science may not be directly profitable to the pursuer of that occupation. As industry attains higher stages of its development, as its processes become more complicated and refined, and competition more keen, the sciences are dragged in one by one to take their share in the fray, and he who can best avail himself of their help is the man who will come out uppermost in that struggle for existence, which goes on fiercely beneath the smooth surface of modern society as among the wild inhabitants of the woods."

In these extracts is a lesson for the South, for the whole country. If we are to be what is possible, education—technical, industrial, industrial art and commercial—will have to have a high and secure place in all our courses. If the South is wise it will look into Germany's efforts; it will study its methods. They have led to success. England's indifference, fatal indifference, led to a falling off in her industrial and commercial movements. Instead

*See, too, what they have done and are doing in the industrial and commercial world.—J. C. M.

of accelerating her speed as Germany did, she has gone on decreasing it. If the South is wise she will see to it that indus-

trial and industrial art schools, technical and commercial schools are opened in every one of her industrial centers.

TECHNICS AT TENNESSEE'S UNIVERSITY.

By CHARLES A. PERKINS, Chairman of the Engineering Faculty.

[Written for the Manufacturers' Record.]

Higher technical education in the South has hardly kept pace with the industrial development of the country. Some of the reasons for this condition are not hard to find. Such education was not desired before the recent enlargement in manufacturing and mining industries. Local needs were almost limited to civil engineering work on railroads, bridges and highways, and this branch was accordingly developed before other engineering courses. After local conditions demand other kinds of engineers, it requires time for institutions to adapt their work to these needs, and time for young men to see the opportunities and to desire to take advantage of them.

Again, a very considerable amount of money is necessary to enable colleges and technical schools to provide such equipment as shall make it possible to give this instruction in an effective manner. Very few institutions in the South, except those receiving government aid, have been able to meet the conditions, and of the State institutions, by no means all have been supplied with the facilities which they need. It can be said of many of them, however, that they have utilized the money and resources at their command in the best possible manner, and in some cases at least they are doing a high grade of work with an equipment that would be considered very unsatisfactory in the wealthier institutions of the North and West.

The University of Tennessee has existed as a classical college since 1794, but not until she received the federal appropriation in 1868 was she in condition to do more than offer the classical and literary education then found in the denominational colleges. At this time a beginning was made, yet the present enlargement dates from the receipt of the increased income from the Hatch Act of 1887 and the new Morrill Act of 1890.

In 1887 Dr. Dabney was inaugurated as president, the faculty was reorganized and the courses of study were completely rearranged. All of the recent development of the institution has not only taken place during President Dabney's administration, but has been in the largest degree due to his judgment and untiring energy.

A machine shop built in 1888 has since been outgrown, and was replaced in 1895 by the present building, which is already too small for the increased classes. This building contains rooms for ironworking, woodworking machinery, forge and foundry rooms, mechanical engineering, laboratory and drawing-rooms, and all power is distributed through the building by electric motors connected with the separate machines or groups of machines and deriving their power from the central engines and dynamos, which also furnish the current for lighting all the college buildings.

In 1891 a large science building was erected to furnish a home for the departments of chemistry, physics, civil engineering and drawing, whose laboratories had previously existed not at all or only as wanderers in isolated and inconvenient rooms. Five rooms were devoted to physics, about double this number to chemistry, and the whole upper floor to civil engineering and drawing. The chapel, library and the administrative offices are also located in this building.

The building of the experiment station

is also upon the university grounds, and, in addition to the station offices, library and laboratories, contains a large lecture-room used for agricultural classes, and the biological laboratory for the students. The farm itself is a short distance out on the edge of town, reached by street cars and within easy walking distance.

It will be noticed that while the agricultural, engineering and chemical courses have been added, the institution has continued its literary work, resulting in a union and overlapping of courses that is believed to be helpful to both. The engineering student is brought in contact with men of liberal education and culture, while the classical students are in classes with men who are able to use their hands, and whose knowledge is derived, partly, at least, from things themselves rather than from books. All literary students are required to take a larger amount of science than is customary in the classical colleges, and at the same time it is the belief of the faculty that a liberal education is an excellent preparation for engineering and agricultural work. The policy is being adopted to make concessions to the graduates of good literary institutions, so as to enable them to complete the technical courses in two years. A number of students have already done this, and it is anticipated that more will do the same. While nothing less than a full four years' course can be considered satisfactory, yet much is done even for those students that do not graduate, and some of our most successful engineers and business men are found in this class.

At this time of free communication and travel the graduate of a technical college must be able to hold his own, not only with the graduate of neighboring institutions, but with those from the best endowed and equipped colleges in the country. It is therefore with much satisfaction that we have been able to follow the success of our graduates in different parts of the country, and occasionally in foreign lands, and to find that they look back with a sincere respect and gratitude to the place where they obtained so much of the mental equipment which has helped them in their various occupations.

Success in life cannot be measured by official position, yet we are glad to know that many of our technical graduates are holding places of responsibility. The following names are given of men who are receiving probably from \$1500 to \$3000 or more, but a list could readily be made up of double the number of graduates receiving salaries of equally large amounts:

Chas. C. Moore, class of 1891, is chief of soil laboratory, bureau of chemistry, United States Department of Agriculture, Washington, D. C.

Chas. E. Chambliss, class of 1892, is professor of biology, Clemson College, South Carolina.

John W. Miles, class of 1892, is chief engineer of a company controlling the electric railways of Vera Cruz and other allied interests.

Samuel T. Neely, class of 1892, who went to the Philippine Islands as chief of the forestry department, is now in China as resident engineer on the Canton-Hankow Railway, which is 750 miles long.

John B. Cox, class of 1893, after assisting to install the electric car service at Lisbon, went to England and is now superintendent of outdoor construction of

the British Thomson-Houston Company, and has been active in placing some of the large contracts with the underground roads of London.

S. A. Beyland, class of 1895, is assistant superintendent of the Dean Electric Co., manufacturer and installer of telephones and telephone systems.

J. O. La Bach, class of 1895, is food chemist for the State of Kentucky.

A. B. Reynders, class of 1895, is assistant chief draughtsman of the Westinghouse Electric & Manufacturing Co.

Walter Hampton, class of 1896, is chief chemist of the United States Cast Iron, Pipe & Foundry Co. of Anniston, Ala.

Wm. H. Gildersleeve, class of 1897, is superintendent of the tannery of the National Tannery Co. at Flintstown, Ga.

Edward F. Kern, Ph. D., class of 1897, is a partner in the Betts Laboratory, consulting electro-chemists, Troy, N. Y.

Van Dusen Hite Smith, class of 1897, is a consulting engineer and contractor for municipal water-works, sewerage systems and electric-lighting plants.

PEABODY SCHOOL FOR TEACHERS.

Opposition to Hon. Hoke Smith's Plan of Using the Fund Among Rural Schools.

Editor Manufacturers' Record:

I was highly pleased to see the stand the Manufacturers' Record has taken in the editorial article in the issue of August 4, headed "The Peabody Educational Fund," against the distribution of this fund to rural schools. In my judgment, this would be like putting a lump of sugar into a large tank of water to sweeten it. It would be lost in the great volume and no permanent good would result.

If this fund could be concentrated in the endowment of a great teachers' college in the South, it would bring about the greatest good to the greatest number. What the South needs quite as much as money for the rural schools is trained teachers—teachers that will exercise the most healthful influence upon the children of the South. The subtle poison that is often instilled into the minds of many of the young people of the Southland by teachers trained in the normal schools of the North is dangerous to the prosperity of the people of the South. No Northern-born citizen can understand or correctly appreciate why the Southern people are opposed to anything looking like negro supremacy, and yet the pitiable condition of the white people of the South during the period of reconstruction, when the negroes dominated; the history of San Domingo, Haiti and other countries ruled by negroes, as well as the experiment made by sentimental and academic pseudo-philanthropists 60 years ago in the settlement of Liberia by emancipated negroes, all go to show that civilization is weakened wherever the negro rules. It is best for the negro himself that he be governed by intelligent white men. He is then far more prosperous and happy and is lifted higher in the scale of civilization.

The distribution of this fund to the rural districts would not serve to perpetuate the memory of George Peabody in any durable way. His purpose in giving this benefaction was evidently to assist the South at the time of its greatest need, that is, at the close of the Civil War, when it gave hope and promise of building up good schools. It was his idea that at the end of 30 years the trust should be dissolved and the money used for the endowment of one or more institutions of learning. Why there should be any opposition to the building up of the Peabody Normal in Nashville to be a great teachers' college for the whole South is hard to account for, unless it has its origin in a feeling of jealousy or envy at the great good fortune of Nashville in being the seat of

so many excellent institutions of learning, and all of them successful. It would be folly to locate a great school of learning in any place where the people are imbued more with the spirit of commercialism than with that of learning. For near a hundred years Nashville has been distinguished above all the cities of the South for its educational advantages. Beginning almost with the founding of the city, and even before the State was admitted into the Union, the creation and fostering of schools and colleges of high character have been the dominant idea of its best citizens. One has but to recall to mind the labors of Thos. B. Craighead, Philip Lindsley, Dr. Gerrard Troost, William Hume, R. A. Lapsley, C. D. Elliott, Dr. Ward, Dr. Price and many others of national reputation to be convinced of the high standard of scholarship that has always obtained in the schools of Nashville. The very atmosphere of the city is redolent of learning. There are at present 87 schools of all kinds carried on in the city. Among them are three medical colleges, three dental colleges, four business colleges, four theological schools, several kindergartens, two night schools, numerous private preparatory schools, school for the blind, four colleges for young ladies, three for young men and one for both sexes, besides several schools in which music and art are taught. Into these institutions students gather by the thousands from every State in the South and from many of the Northern and Western States. The Peabody School has had an attendance of between 600 and 700 students for several years past. It has built up a character for thoroughness of instruction that is scarcely equalled in any other university. Its alumni are scattered all over the South and West, and are a fruitful source of inspiration, influence and power for the institution. It would require many years for a new teachers' college to reach the prominence now enjoyed by the Peabody Normal. It was established by the trustees of the Peabody Fund, aided by State appropriation, and by the trustees of the University of Nashville, working in conjunction. The value of the property belonging to the University of Nashville, the donations which are promised by the city and State, will probably secure a local fund of not less than \$1,000,000 in case the trustees of the Peabody Fund decide to endow the Teachers' College at Nashville.

The situation of Nashville is one that best fits it above all other Southern cities for the seat of a great institution of learning of this character. The climate is mild, agreeable and healthful. No yellow fever has ever entered its borders. It occupies a central position in the best portion of the Mississippi valley—a region that is destined to become the most populous and the most opulent of any other equal area on the globe. It is surrounded by a soil so fruitful and with productions so diversified that provisions and breadstuffs, vegetables and fruits, dairy products and fuel may be furnished at cheap rates for the necessities of a great population. It can draw supplies of all kinds from a larger area in a shorter time than any other place in the Mississippi valley. Railroads radiate to all points of the compass, and it is situated on a waterway that is notable among all the navigable streams east of the Mississippi river. It is the center of large publishing houses, and its citizenship recognizes the value of schools and gives every possible sympathy, support and encouragement to them. There is no doubt whatever that Nashville will still retain the honor in the future that it has won in the past, of being the Athens of the South, for it has planted wisely and well. Its feet rest upon the high plane of

mental culture, the most substantial and enduring glory of all the ages. Wealth can build no monument that can stand beside that of learning; no martial deeds that can eclipse it; no patriotism that can long survive without its conservatism and wisdom, and there can be no material advancement made in this age without the assistance of education. It is the groundwork of all that is best in man, and the people of Nashville recognize this great

truth. Many of its schools are but in their incipency. Many of these were begun less than 30 years ago without any assistance, but with a lively faith and strong hearts the founders of them have never slackened their efforts, but have moved on year after year to a higher place. The goal of one year becomes the starting-point for the next.

J. B. KILBREW.

Nashville, Tenn.

SOUTHERN FORESTRY AT ST. LOUIS.

[Special Correspondence Manufacturers' Record.]

St. Louis, Mo., August 15.

In the way of forestry displays the South makes an appearance at the World's Fair generally in keeping with that section's representation in other lines, and worthy, in the main, of the fact that the South contains today the greatest body of standing merchantable timber in the Union. So far as the limited space in the Forestry, Fish and Game Building would permit, there is a very fair showing of the native timbers of the South and specimens of the principal products into which these woods are manufactured on the ground or within the borders of the various States which make the exhibits. Thus, Virginia shows a full line of woodenware from a Richmond house which is the largest manufacturer of goods in that line in the world; North Carolina has a good exhibit of furniture from the High Point factories, which city comes next only to Grand Rapids as a furniture-making center in this country; Tennessee shows mantels from her Knoxville factories, which are the largest exclusive makers of mantels in the world; Arkansas displays a sample of the oars which have made her famous in this line the world over, and the Southern pine manufacturers have a display which presents this vast industry in the most favorable light in which it has ever been seen.

Here, however, as in other departments of the fair, there is more than one discordant note, for States which should be seen with the rich exhibits which their great resources in this line suggest are represented not at all. West Virginia is a flagrant offender here, as elsewhere: Florida hasn't a stick of timber in the building, and South Carolina is without representation. While Maryland is not so extensively a timber State, yet in view of the splendid showing she has made in other buildings, it is something of a surprise to find her wholly absent from the Forestry, Fish and Game Building. Alabama is seen nowhere but in the Mines Building, and her splendid showing there is due entirely to the enterprise of the Commercial Club and the business men of Birmingham.

In manufactured products Virginia makes a most elaborate display, one whole end of her space being given up to an exhibit of the great variety of woodenware manufactured by the Richmond Cedar Works of Richmond. Cedar, oak, pine and cypress are the materials out of which the various products shown are manufactured, all of which materials are obtained in the famous Dismal Swamp, almost all of which is owned by this company. It has been operating there for 30 years, and figures that about two-thirds of the supply of timber has been exhausted. It has been reported at times that with the cutting out of timber, thus letting the sun strike the swamp, there follows a gradual drying up of the swamp; but representatives of the company deny that there is any general effect of this sort. In some places, it is said, there appears to be even more water now than when it was covered with timber. It is universally conceded that if drained this would be a section of unsur-

passed fertility of soil. Virginia has a very highly decorated display, in which are shown most of the birds and game animals of the State, mounted and in cases, many of which were taken in the Dismal Swamp. There is also a novelty in the way of a complete line of all the oysters of the State in wax. This is a triumph in modeling to be seen nowhere else, and accomplished in the face of declarations by experts that such an achievement would be impossible. The models are true to life in size and color, and mounted on shells they form a life-like and very important feature of the display.

The rest of the exhibit consists of slabs, boards, butts and sections from the timber forests of the western part of the State, consisting mainly of oaks, gums, walnut, poplar, maple, spruce, etc.

Besides one of the most elaborate fish and game displays in the building, North Carolina makes a complete and very attractive exhibit of the timber resources of the State, both in logs, sections and finished woods. A cabin in the center of the exhibit has an exterior of pine slabs, and is finished inside with pine, cypress and gums—tupelo, black and sweet—and contains furniture from some of the 40 factories at High Point. A desk is one of the showpieces of this furniture display, and in finish and design it is so striking a production as to prove a decided center of attraction. A feature here is the gum flooring made by a company of which Nathaniel Thayer of Boston is president. The display of timbers includes a sample of all the merchantable timbers of the State, and as North Carolina's territory stretches from the sea-level to the highest elevations east of the Rocky mountains, there is a great variety of timbers shown. There is yellow pine and cypress from the eastern part of the State, and also cedar from which not only cedar buckets are made, but lead pencils as well. There are oaks, ash and gums from many parts of the State, and from the mountain regions there are birch, spruce, hemlock, yellow poplar, walnut, and from the higher elevations even white pine of so fine a quality as to deceive white-pine buyers of the Northern States. All the timbers of the State are shown in large-sized planks, with half of the surface dressed and sanded, so as to show the natural wood, and the other half filled and varnished with an oil-rubbed finish, so as to show the finish each variety of wood is capable of taking. Interesting features of the exhibit are a collection of "French" briar-root pipes, together with the wood from which they are made, by a manufacturer of Rochester, N. Y. This wood is the stumps and roots of mountain ivy, or kalmia, obtained in Western North Carolina, from which about all the American-made pipes are manufactured. The suggestion is made that here is an opportunity for the employment of capital in the location of a factory nearer the supply of raw material, as the wood is a close relative of that from which the true French briar pipe is made, and is held in much favor by the pipe-smoking public. Another item

in the exhibit is a collection of insulator pins for telephone and telegraph poles, made from North Carolina locust, which are of such recognized standard that the blanks pass as a medium of exchange, so it is said, in the mountain country.

Georgia shows over 100 varieties of merchantable woods, dressed and in the natural state, and a feature of this display is an elaborate system of labeling and a diagram with each specimen showing the extent of the territory in which each variety is obtained. This work, done under the direction of Prof. W. S. Yeats, the State geologist, is in keeping with the systematic manner in which all the displays of Georgia at the fair have been handled. In addition to the woods and timbers, there are specimens of doors, mantels and furniture from the factories at Atlanta and Rome. A prominent and exclusive feature of Georgia's display is a complete line of rosins and pine-tree products exhibited by a firm of Savannah, which city is the leading naval-stores depot of the world. A representation of a pine forest shows the process of "orcharding," or taking the sap from the pine trees for the purpose of making turpentine and other products. There is also a turpentine still, which gives a fair idea of the methods by which the various products are obtained.

In Mississippi's display a special attempt has been made to show the hardwoods of the State, the commission having the matter in hand disclaiming any effort to do much else. Fifty-five varieties of woods have been exhibited, all of them commercial, shown in the plain state and also varnished and as they appear when stained. In the display are poplar, several varieties of oak, cypress, beech, sycamore, walnut, ash, gums, etc. A considerable development of the hardwoods of the State is announced, and it is stated that there is a greater interest in Mississippi and her resources than ever before, and that people are moving into the State as they have never yet done. A start has been made in the manufacture of furniture, two or three factories being operated to turn out products of oak and gum. Staves and barrel headings are made of oak and ash, and there is a box-shook factory at Sardis which is exclusively engaged in making up red gum. Cheap grades of furniture and also some wagon stock are made from gum as well, although a great deal of gum is shipped from the State, as is also sycamore, which exists in large quantities, and walnut, which is fairly abundant in the northern part of the State. While the southern part of the State contains vast forests of long-leaf yellow pine, there is also a good deal of magnolia, cedar, birch and hickory, which is being utilized to some extent. Much of the pine is shipped away in the form of dimension stuff, flooring, siding, etc., a great deal of it going abroad, although along the coast it is used for making small vessels, fishing smacks, etc. At the mills throughout the pine belt a considerable quantity is made up into flooring, doors, sash, blinds and fence palings. Turpentine orcharding is greatly increasing here at this time, and is becoming an important and profitable industry.

In Louisiana's exhibit there are 60-odd varieties of woods shown, some of which are not commercial, but nearly all of which are fairly abundant and in use. There are 14 varieties of oaks, eight or nine of them commercial, and growths of which cover all the ridges of the alluvial lands and are found on the bluff lands of the State. Some fine furniture is shown, made by a New Orleans factory from native oak, and oak is also used to a large extent for the manufacture of staves and wagon stock. Some bridge timbers are being sawed from oak, and to some extent ties are being sawed from it. Along the Washita a few

mills are sawing oak lumber for export. The cypress exhibits include a board 43 inches wide by 15 feet long, which represents only a portion of the diameter of the tree from which it was cut. There are also four doors of different types of curly cypress panels, two mantels of cypress, cypress sash and doors, cooperage and shingles and photographs of cypress mills, cypress logging, steam loaders, etc. The great growth of the cypress industry in Louisiana, it is stated, has resulted in the cutting out of much of the accessible cypress timber of the State. While there is a good deal of this timber still left in Louisiana, it is now necessary to cut and haul or wait for high water to float the logs out. The immense long-leaf yellow-pine forests of the State are represented in boards and panels of the plain and curly pine, and there are also doors, moldings, window facings, siding, ceiling, flooring, framing, etc. Estimates on the amount of long-leaf yellow pine in the State indicate that it will take from 15 to 20 years, at present rate of cutting, to practically denude these forests. While John H. Kirby declared his intention some time ago of instituting a system of forestry by which it would be possible for him to perpetuate his forest growths, it is stated that nothing has been undertaken in this line in Louisiana. In connection with the yellow-pine exhibit there is a turpentine display, showing the various stages of turpentineing the trees, which industry has gained considerable headway in what are known as the "Florida parishes," or those counties of Louisiana east of the Mississippi river. There is also shown a display of the products from fat pine—turpentine, oil of tar, etc.—secured by the process known as destructive distillation, which has been extensively experimented with in various portions of the South during recent years.

The appearance of cottonwood in the exhibit suggests that this wood, formerly regarded as worthless, is now being worked by a number of large mills in Louisiana, the product being used extensively for boxing and to some extent for finishing. The utilization of a number of other woods which have thus taken on a new value is likewise suggested by their presence here. Sweet or red gum is being sawed for furniture to some extent, but whole cargoes are being exported for the manufacture of veneering for sewing-machine tops. Abroad this wood is dignified by the name of "satin walnut." Tupelo gum, which is white, strong and easily worked, is being made up into boxing material with good results, and it is believed will grow in popularity. Louisiana persimmon is being exported, largely to Liverpool, where it is made up into shuttles. Some dogwood is also being shipped abroad for the manufacture of shuttles and other shapes where a particularly hard wood is required.

Of the ash shown, the principal use is in the manufacture of oars, in which industry two of the largest oar makers in the United States are engaged, one at Baton Rouge and the other at Plaquemine. Ash is also used to some extent in making wagon stock and for flooring. There is still some poplar in Louisiana, although it has been cut very fast in recent years. It is largely shipped away, to be used for buggy bottoms, backing for furniture, etc. A number of small factories in the State are making hickory handles. None of them is very large, but excellent materials are turned out, as the samples exhibited will show. Several veneering factories are using sweet gum, cottonwood, poplar, tupelo gum and elm for fruit boxes, crates and boxing, which are meeting with a good demand. The willow, not heretofore prized, is being utilized to some extent, with good results, for the manufacture of staves for apple and sugar barrels.

Samples are shown of red cedar. While not now utilized, it is stated that there are several large brakes in Northwest Louisiana, with trees from 20 inches down in diameter, and it is declared that the cedar might be used to good advantage in the manufacture of lead pencils, buckets, churns, etc.

There is a very complete exhibit of Spanish moss in connection with the Louisiana display, in which are shown the various stages by which it becomes a fine, clean material, fit for the making of an elegant mattress. It is also shown made up as saddle pads and for stuffing horse-collars, buggy seats, etc. While it is gathered mostly by negroes and is handled generally by small dealers, the extent of the trade in moss constitutes an important minor industry of Louisiana.

The elaborate display made by Texas in the Forestry Building has already been described in these columns. Suffice it to say at this time that Texas here makes an altogether creditable showing of her timber resources, the important yellow pine, of which she has so large an area, being especially well shown off in the way of numerous specimens of the log, dressed timber and finished lumber. The strikingly-arranged exhibit contains 130 varieties of Texas woods, some of them of little or no commercial value, and interesting because they are shown by no other State than Texas, while in large number the specimens seen consist of woods of great commercial value, being particularly rich in white oak, of which Texas has one of the most extensive areas now standing.

Arkansas shows a complete display of the many varieties of timber found within her borders, consisting largely of hardwoods, although some of the largest pine mills in the country are operating in the short-leaf yellow pine, which still exists in large quantities in that State. The Little Rock Board of Trade has a prominent part in the success of this display, being responsible for the collection of dressed timbers, which forms so large a portion of the exhibit. In the display there are some 50 varieties of wood—pines, oaks, gums, ash and walnut predominating. Arkansas has yet to develop any extensive factories in a woodworking way, although such mills as she has are the leaders of their kind. Her unsurpassed white oak, for example, is made into staves almost exclusively, instead of being made up into furniture by her home people, and in the exhibit there is shown in the way of manufactured goods only staves, headings, oars and handles in hardwoods, and flooring and siding in the pine. In oars, however, Arkansas is famous the world over, as her product in this line is accorded a preference everywhere.

Tennessee leads the procession with a display of 340 varieties of timber, a large number of which are merchantable woods, as is indicated by the fact that Memphis is the greatest hardwood lumber market in the country. Tennessee manufactures her product more generally than any other Southern State also, as is shown by the fact that there are 100 spoke and handle factories in the State, a furniture factory in almost every little town, woodenware factories in great numbers everywhere, a pencil factory at Lewisburg, and the most extensive mantel factory in the United States at Knoxville. In the display there are all kinds of manufactured goods, and so extensive is the industry that the Chickasaw Cooperage Co. of Memphis found it necessary to secure a large space in another part of the building in order to make the showing of its wares desired. The woods which the State displays consist largely of oaks, of which there are some 40 varieties; walnut, gums, hickory, elm, beech, poplar, sycamore, cottonwood, ma-

ple and cherry, and these and all the other woods shown are presented in very attractive form in natural, dressed and finished shape. One of the interesting specimens is a six-foot cut from a walnut log. In connection with the cedar displayed it is stated that formerly this wood was so plentiful in some parts of the State that the farmers would use only cedar for fence rails, using oak and such "perishable" woods only for firewood.

While Tennessee is so extensive a manufacturer of her own woods, she yet spares a good portion to other communities, and St. Louis, Cincinnati and Grand Rapids are large buyers of Tennessee timber.

Kentucky's timber exhibit is an eminently practical one, it being declared that every one of the 100 varieties of woods shown can be supplied in carload lots in accordance with the samples exhibited here. The result is that it is treated as a business proposition, and inquiries are being constantly received for supplies, as well as for timber tracts. As an instance, a dealer from London, England, called at the space recently to inquire about securing a large quantity of wagon and carriage stock to supply his trade with the Transvaal country. There is a large white-oak butt in the display some five feet in diameter and the most perfect cut of white oak on the grounds. It has been chalked out to demonstrate the proper method of quarter-sawing. Some French timbermen who thought they understood the manner of doing this work found it a revelation, and confessed that the Americans had shown them their ignorance of real quarter-sawing.

The timber section of Kentucky is in the eastern part, extending from the Tennessee to the Ohio line, and embracing some 40 counties. It is declared to be a section scarcely tapped, and in 12 counties, in which there is not a mile of railroad, the forests are practically primeval. In the exhibit here made there are two or three kinds of poplar, 5 varieties of oak, half a dozen kinds of hickory, half a dozen varieties of ash, several kinds of gum, walnut, etc., which are presented in various forms, some logs, some dressed and some finished. The oak and the hickory are very well utilized by home manufacturers, as Kentucky has the largest implement and wagon factories in the world, and also the most extensive handle factory. But it is stated that there is not a desk factory in the State, and but a few furniture factories, and instead of shipping the fine raw material out of the State and paying freight back again for the desks and furniture they use, the Kentucky people are anxious to have factories locate there. To bring about this result is one of the objects in making the display here that has been made.

In the Forestry Building, as everywhere else on the grounds, Missouri has made an elaborate and striking display. In ornamentation she is easily a leader, and in the substantial respect of forcibly presenting the value of her timber resources she is not inferior. In an elaborate pagoda, built of Missouri woods, there is shown in finished form in panels and columns and frames the possibilities of her pine, oak, gum, poplar, black walnut, etc. In addition to the finished interior work, there is at one end of the exhibit a collection of tree butts, which show the importance and value of her timber resources. On the walls are specimens of hoops, handles, etc., and in various parts of the exhibit there are specimens of furniture which has been made of Missouri woods.

Occupying a large space at one end of the Forestry Building is a notable exhibit by the Southern Lumber Manufacturers' Association, an organization of yellow-pine operators in the States of Florida, Alabama, Georgia, Mississippi, Louisiana,

Texas, Arkansas and Missouri. An extensive display of yellow-pine timber has been arranged, but in addition, and more important, the association has constructed a large-sized building in the space, and has made every part of it, inside and out, and even including the furniture, of yellow pine, with the object of demonstrating what can be done with this not wholly understood wood. The result is a distinct surprise to a large majority of the people who visit the space, not even excepting lumbermen themselves. The surprise comes in the beauty of the finish which is secured on the interior and on the tables and chairs which the rooms contain. No

hard-oil finish on the finest oak can surpass in lustre that which the yellow pine here wears; it gleams like ebony, and all the beauty of natural grain is retained. No filler is used, it is explained, but just a stain, then one coat of shellac, sandpapering to a smooth surface and applying three coats of a prescribed hard-oil finish; then rub down, finishing with pulverized pumice stone and crude oil or raw linseed oil, and an effect the same as shown in the exhibit is guaranteed. This is one of the novelties of the fair, and how it can help but start a boom in Southern yellow pine as a wood for the finest finish it is difficult to see.

ALBERT PHENIX.

INDIVIDUAL EXHIBITS AT ST. LOUIS.

[Special Correspondence Manufacturers' Record.]

St. Louis, Mo., August 15.

A novelty in the belt line is shown in the exhibit of the Graton & Knight Manufacturing Co. of Worcester, Mass., which occupies a space in block 34, Machinery Hall. The novelty consists in showing belts running in a tank of water, the specialty of this company being the manufacture of belting which is not affected by moisture of any kind. One of the company's Neptune eight-inch double-leather belts, made endless on the pulleys, with no stitching, sewing, riveting or fastening other than cement, is shown running in a tank of water, and in addition there is a stream of water pouring down on it from above as it revolves slowly through the water in the tank. Guaranteed to be waterproof, these belts are especially adapted to paper mills, bleacheries, laundries, dyehouses, threshing machines and other places where a belt is exposed to steam, water, dampness or moisture of any kind. The belt is guaranteed not to come apart in the laps, and where double belting is used not to come apart in the laps or plies, whether run in a damp place or wholly submerged in water. In the exhibit are several rolls of the various sizes of Neptune and Special Planer belts, the company's brands of waterproof belts, and the booth is ornamented and made additionally attractive by a large electric Neptune sign, which flashes red, green and white.

For Private Travel.

An exceptionally handsome and commodious private car and a rebuilt engine constitute the exhibit of F. M. Hicks, builder of railway equipment, whose locomotive and car works are at Chicago, and whose office is in the Fisher Building, that city. The car is of a type of which the Hicks works are making a specialty, and the exhibit is an official car designed for the private use of railway officials. It contains many features of comfort and convenience not found in the private cars of other makers, and has received the highest praise of the numerous railway presidents and officials who have inspected it at the fair. It occupies a prominent place near the east end of the Transportation Building, and attracts the attention of all visitors to the building. Spaciousness, convenience and elegance are the dominant features of the car. Although it contains but one private room, outside of the section for help, it is so arranged that sleeping accommodations for 14 people may be made down. The car contains a 12-foot observation room, one stateroom with upper and lower berth, folding white-metal washstand, hopper and wardrobe, one private room 6 feet 6 inches by eight feet eight inches with brass bed, dresser and wardrobe, bathroom adjoining with washstand, hopper and bath, 14-foot dining-room with eight-foot extension table, sideboard, writing desk and bookcase, section for help, toilet-rooms, kitchen with

Stearns wrought-steel range, iceboxes, sink, dish racks and cupboards complete; also a large refrigerator on the forward platform, which is vestibuled, and ample provision for storage in cellars underneath the car. The length of the car is 67 feet over end sills. The rear end of the car has a wide observation platform extending three feet beyond the end sills and recessed two feet six inches. The steel platforms and couplers are the National. Trucks are six-wheel Pullman standard 38-inch steel-tired wheels.

The observation room is finished in Cuban mahogany, with four extra wide windows, with art-glass gothics, and two observation windows and door, cut low. The wood is carefully selected and most beautifully figured, and natched with a narrow inlaid border and neatly-carved caps for door posts and window piers. The upper deck is "Empire," with head linings done in a delicate shade of olive, daintily illuminated in gold leaf. Deck ventilators and bulkhead transoms throughout the car are ornamental glass. The upholstery of the observation room is hand-buffed olive leather on chairs and double sofa berth. Carpets throughout the car are English Wilton, and hangings silk and silk velour in colors to harmonize with car's and woodwork of the several rooms.

The stateroom is finished in natural oak, and contains upper and lower berth of the latest type, upholstered in mahogany frieze plush of small diamond pattern, with carpets, hangings and head lining to match. This room is provided with hopper, with upholstered cover, folding white-metal washstand and large locker, making a complete and comfortable compartment. This room also connects with the bath.

The private room measures 8 feet 8 inches by 6 feet 6 inches, is finished in vermilion wood, and provided with a three-side brass bed, dull Polet finish. The dresser is built in, with mirrors and small spindle racks above. There are also mirrors and spindle racks and lockers above the bed, and a comfortable wardrobe. Space under the stationary bed provides storage for two or three steamer trunks, and there are bedding drawers opening into the passageway. Carpets, hangings and upholstery are olive, and head lining matches, the combination of the vermilion wood and green being very attractive.

The bathroom, adjoining the private room, is provided with porcelain bathtub and aquameter hopper, white-metal washstand with mirrors above, inlaid rubber tiling and rugs on the floor. The walls are wainscoted with tiling and finished above in natural oak, quarter-sawn. The window of the bathroom is art glass and cut high.

The dining-room, 14 feet in length, is finished in golden oak, the windows are extra wide with art-glass gothics, and small carved alcoves with mirrors in the piers. The room contains a double sofa berth,

dining chairs upholstered in olive Spanish leather, eight-foot extension dining table, beautiful sideboard, china cabinet and writing desk with bookcase above. The writing desk is provided with electric light with automatic switch. The color scheme of the dining-room is olive and gold; carpets, hangings, upholstery, table cover, head lining and art glass in perfect harmony. The toilet-rooms are provided with dresser, white-metal washstand, cooler and aquameter hopper; floors covered with rubber tiling.

The section for help is plain oak, upholstered in Chase leather, and has upper and lower berth. The kitchen is large and complete, with Stearns wrought-steel range, iceboxes, sink, dish racks, cupboards, etc.

The car is heated by a Baker heater, with commingler for use in connection with train line steam, Safety Car Heating Co.'s system. It is lighted by Pintsch gas and electric lights, with reading lamps in private room and stateroom, and electric fans throughout the car. The shades are silk-lined pantasote on Hartstorn rollers, and furnished with Forsythe catches. Draperies and carpets throughout the car are rich and beautifully blended in color. The entire woodwork of the car (with the exception of the kitchen and section for help) is five-ply built-up veneer work, with neat inlaid borders and highly polished. The outside finish of the car is the finest that can be produced.

The locomotive in the exhibit is a standard eight-wheel engine weighing 53 tons, cylinders 18 inches in diameter, stroke 26 inches. The frames are extra heavy 4x4. This engine, shop No. 1018, is exhibited by the Hicks Locomotive and Car Works as a specimen of repair work. Work which has been done includes a new fire-box, new tires, steel driving boxes and new brasses, new Russia iron jacket and asbestos lagging, new piping throughout, new front end complete with nozzles, netting and stack, in addition to complete and thorough overhauling of all machinery and parts. The cab fittings include two Monitor injectors, Nathan triple sight-feed lubricator, air signal, air bell ringer, air sander, steam heat. The engine is equipped with outside equalized brakes and new nine-and-one-half-inch Westinghouse pump. The tender has new frame and new wheels.

Up-to-Date Car Building.

In the street-car section of the Transportation Building the J. G. Brill Company of Philadelphia has made a typical exhibit rather than undertaking anything novel or historical, as may be found in the exhibits of some other car builders, notably that of the St. Louis Car Co., alongside which has assembled a stage coach and a number of primitive street cars and other conveyances, in addition to the makes of today. In the Brill exhibit there are but three cars, all of which are up-to-date types, and are representative of the Brill methods of construction. In them are demonstrated all the principal features of excellence in car building that the company has introduced in recent years. The Brill semiconvertible car, which is a type vastly popular these days, has window pockets in the roof. When the windows are raised, both upper and lower sashes go into the roof pockets, leaving the window opening equivalent to that of the open car. The inside width of the car is relatively greater than where the windows are stored beneath the sills, and at the same time a very low sill is possible, because room is not needed for storing the windows below the sill. As a result, the car with windows open more nearly approaches an entirely open car than any other semiconvertible car that carries the

windows with it. The window sills are so low on this car that an arm rest above the sill has been provided.

The Brill convertible car, another of the three types shown, has the same principles in construction as the semiconvertible, with the addition that the panels as well as the sashes slide into the roof. Both are entirely self-contained, carrying all sashes and panels on the car at all times, so that they can be raised or lowered at any time, either by conductors or passengers. To avoid sticking, all sliding parts are made of metal.

A new and desirable feature of the semiconvertible car is an arrangement for holding the motorman's window at any height. The side vestibule window is very wide, and is so built under a new patented method that both sashes are raised at once and automatically assume their proper place as soon as the full height is reached.

The third car is of the regular open Narragansett type. Its distinguishing Brill feature is the angle-bar sill, which gives a maximum amount of room underneath the car for the swiveling of the truck.

Besides the cars, the exhibit contains specimens of the Brill trucks. Here are shown long and short whole-base swivel trucks of the No. 27 type in several sizes up to the extra heavy truck for the heaviest passenger cars. A single truck with solid-forged sides is shown, and also an Eureka maximum traction truck. On the top of the largest and heaviest No. 27 truck is an unpainted forging of a side frame for such a truck, for the benefit of those who are skeptical as to the side frames of these trucks being forgings. This forging invariably excites the admiration of blacksmiths who examine it.

With the Brill exhibit is a semiconvertible interurban car, made under Brill patents by the American Car Co. It has a 30-foot body and is 52 feet over the vestibules. The inside finish is mahogany, Corinthian style, with marquetry panels. The ceiling is semi-Empire, with recessed dome. All floor coverings are filled with brass corner-pieces to prevent dust from catching. The seats are leather-covered. A feature of special excellence is the plan of lighting the car, the ceiling being dotted with 86 frosted-bulb eight-candle-power incandescent lamps. The frosted bulbs soften and diffuse the light, while the great number of small units of light give a highly satisfactory evenness of distribution. An M. C. B. type of truck is shown as recently constructed by the American Car Co., to meet the wishes of those who may prefer it to the regular Brill truck.

Metal-Working Machines.

The Betts Machine Co. of Wilmington, Del., has a very attractive exhibit of boring, slotting and planing machines located in a prominent place in Machinery Hall. Although each of the four machines shown is of massive proportions, three of them are only about halfway between the extreme of sizes made by the company. The exhibits constitute specials, the house also making all kinds of machine tools. The machines shown are all in operation, and are notable for their smooth running. One is a patent worm-driven vertical six-foot boring and turning mill, arranged with a Northern Electric Co. 15-horse-power motor. It is driven with a Morse silent chain, connected, and five steps of cone gearing take the place of a cone pulley. Another is a 15-inch slotting machine, arranged with direct-connected motor drive. All table adjustments are made from working position. The stroke is 15½ inches. The distance from the front side of the cutting-bar is 30 inches, making it possible to slot in the center of 63 inches. The distance from the table to the under-

side of the frame is 22½ inches. The compound tables have an adjustment of 38 inches longitudinally and 30 inches transversely. The revolving table is 33 inches in diameter. A third machine is a 72-inch planing machine, which shows an improved extension slide sidehead (patent applied for) and self-contained countershaft with motor drive. All driving gears are of steel, cut from the solid. The plates are 73 inches wide, 73 inches high and of any desired length. The fourth machine

The regular work which has been allotted to this outfit is to drive a 35-kilowatt Triumph 220-volt generator as a motor, coupled to a 90-kilowatt 2200-volt Warren alternator, for the purpose of bringing the latter to synchronism, so that it can be operated as a synchronous motor with alternating current at 2200 volts, which is furnished by the Exposition Company from another Warren machine. After this result has been accomplished the gas engine generating outfit is cut out

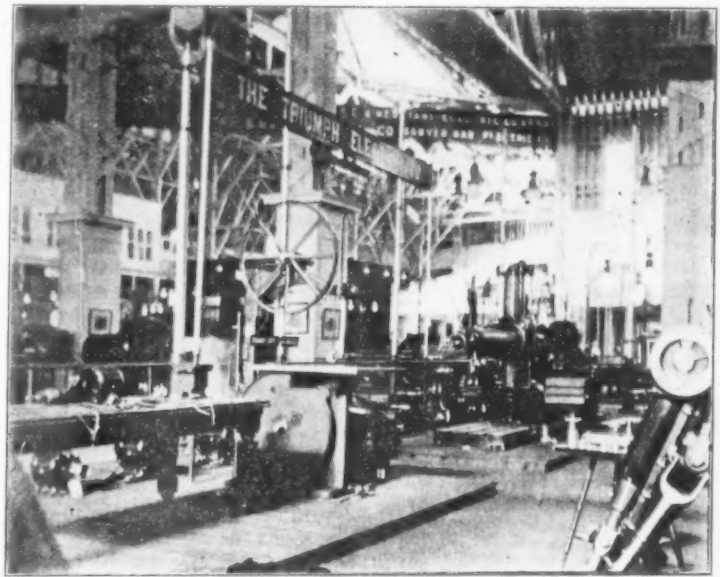


EXHIBIT OF TRIUMPH ELECTRIC CO.

is a motor-driven No. 3 horizontal boring and drilling machine, and is the largest of its type made by the company. The spindle diameter is five inches; length of table, 10 feet; extreme swing, 83 inches.

Novelties in Electric Motors.

The exhibit of the Triumph Electric Co., Cincinnati, Ohio, occupies the whole length of the north side of block No. 8 in the Electricity Building, under the supervision of the Wesco Supply Co., agent. Two accompanying illustrations present views of the exhibit.

by an arrangement on the switchboard, and the synchronous motor, in turn, drives the 35-kilowatt Triumph machine as a generator from which to supply 220-volt current for the operation of all the 220-volt apparatus in the space.

Considering the novelty of this arrangement, and the fact that these generators are operated by and connected up with machines of other makes so successfully, shows that the Triumph Company is able to cover any specifications and furnish machinery which can be successfully used

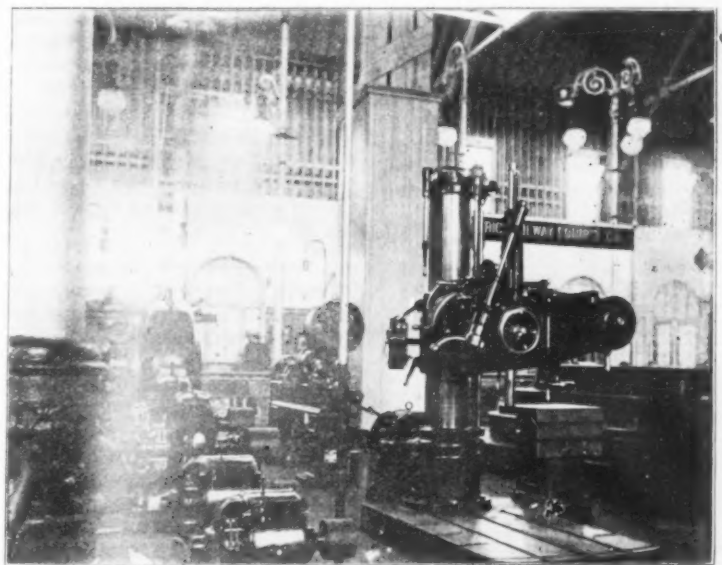


EXHIBIT OF TRIUMPH ELECTRIC CO.

The company has a full line of motors and generators of different sizes, among them a 7½-kilowatt 220-volt marine-type generator, direct connected to one of the latest styles of electric gas engines made by the Fairbanks-Morse Company, capacity 12 horse-power. This set is one of the best of its kind ever shown in practical operation, and has met all requirements, being used for lighting and power purposes throughout the Wesco exhibit, the latter including an extensive line of electrical machinery, lamps, fans, etc.

with other kinds of electrical apparatus under all conditions.

The other working apparatus in this exhibit includes a small motor generating set, consisting of a 7½-horse-power 220-volt motor and a five-kilowatt 550-volt generator, current from the latter being used to operate five Adams-Bagnall arc lamps wired in series, and to supply current for several railway, arc and incandescent headlights which are on exhibition.

In addition, there are several modern machine tools in the exhibit operated by

Triumph motors, which will no doubt be of much interest to factory owners and shopmen, the Triumph Company having spared no pains to make this portion of its exhibit demonstrate the several advantages in the use of electricity for all kinds of shop work, and the adaptability of Triumph motors, which are especially designed to do the work with a view to economy in operation and their original cost.

A Lodge & Shipley lathe and a Bickford drill, operated by the new type of Triumph variable-speed motors, demonstrate that it is possible for the operators of machine tools to have full and unlimited control of them, and by an easy adjustment of the regulating devices obtain any speed desired.

One of the Fay & Egan Co.'s latest improved No. 50 hand saws is also an interesting feature of this exhibit, and the different kinds of work and the manner in which this tool can turn it out, in connection with its ease of adjustment and simplicity of operation, are points which will attract the attention of all woodworkers. The difference is shown between the old way and the new modern methods which are now rapidly developing in those lines, thanks to the electric motor and its application to the operation of woodworking machinery.

The company has also on exhibition a 100-kilowatt generator in order to illustrate the class of apparatus it builds in the larger sizes; also a number of partly-wound armature cores, coils and other construction parts which are of considerable importance in the building of apparatus. All of these are exhibited for the purpose of inviting close inspection.

Hugh-Speed Cutting.

The F. E. Reed Company of Worcester, Mass., is making a representative exhibit of its lathes in Machinery Hall. The exhibit includes a 30-inch by 12-foot, with compound rest; a 24-inch by 10-foot, with compound rest; an 18-inch by 6-foot, with compound rest; an 18-inch by 7-foot, a special lathe for the use of high-speed steels; a 16-inch by 6-foot, with compound rest, taper attachment, set in a pan; a 16-inch by 6-foot, with compound rest, driven by direct-connected variable-speed motor; a 14-inch by 5-foot, with compound rest, and a 12-inch by 4-foot, with compound rest, taper attachment, set in a pan. In showing the machines particular attention is called to the 18-inch lathe for the use of high-speed cutting steels, and the claim is made that this lathe stands at the head of its class. No high-speed steel can stall it, it is declared, and used on any kind of diameter work, whether of iron or steel, it will swing. Another machine especially pointed out is the motor-driven lathe, which has been declared by expert electricians to be the best electrical device yet designed for an engine lathe. The motor is of the variable-speed type, giving a variation of 300 per cent., and with it goes an excellent controller. This machine is in daily operation. The company also has a 10-inch special manual training woodturning lathe in use in the exhibit of the Colleges and Mechanic Arts and Experiment Stations in the Educational Building, the only lathe exhibited in that place, and there is also a 24-inch lathe in use in the exposition machine shop.

Jacketings for Piping.

The exhibit of the Philip Carey Manufacturing Co., whose main offices and factory are at Lockland, Ohio, with St. Louis branch in the Lincoln Trust Building, consists of a well-arranged booth in Machinery Hall, and also what might be called a working exhibit in the Steam, Gas and Fuels Building, where all the pipes and boilers have been provided with its coverings. In addition to the exposition

plant proper, Carey's coverings were also used on the large plant of the Westinghouse-Church-Kerr Company. In applying these coverings all piping over 12 inches in diameter is first covered with a layer of 85 per cent. carbonate of magnesia blocks, securely wired on and finished with an additional half-inch of 85 per cent. carbonate of magnesia cement, trowelled hard and smooth, when the whole is canvassed and banded with brass bands. On all high-pressure piping under 12 inches in diameter the sectional 85 per cent. carbonate of magnesia is used, finished with a canvas jacket and lacquered brass bands, and all joints, as well as the fittings and flanges, being hermetically sealed with magnesia cement. In the Carey Company's booth there are exhibited all of its asbestos and magnesia materials, in the crude as well as manufactured form. Of special interest is its roofing, which is illustrated on miniature buildings, showing the method of application on both flat and steep surfaces, valleys and yankee gutters. Its flexibility makes it easily applied over uneven and rough surfaces, and being fire-resisting, it is rated by underwriters in the same class as slate or tile.

Economy in Dumping.

The Goodwin Car Co., controlling and operating patents for dumping cars, vessels, wagons, barges, bins, trestles, chutes and the like, with offices at 96 Fifth avenue, New York, and 115 Dearborn street, Chicago, have a very practical exhibit in the Transportation Building, with the object of demonstrating how much time and labor can be saved by their equipment in construction work or in handling such material as coal, iron and rock. The exhibit consists of a full-sized ballast and gravity dumping car, and models which are used to demonstrate the practical operation of the car give an idea of how quickly a car can be unloaded. One model shows the principle of the dump as applied to a barge. The full-sized car is an example of the regular heavy work general service car for handling all kinds of material and disposing of it in the shortest possible time. A number of this style of car is now being used in connection with the work of excavation and construction by the O'Rourke Engineering & Construction Co. at the Grand Central Station, New York city. These cars are built to handle 40 to 62 yards of very heavy material, and to get rid of it without loss of time. They are dumped by air, and are so arranged that they can be unloaded without stopping the train or blocking the track.

Manganese Steel in Tracks.

Wm. Wharton, Jr., & Co., Incorporated, of Philadelphia, have an exhibit in the Transportation Building which is intended to lay particular stress on the introduction of manganese steel into track work in general, and to illustrate its great value by exhibiting some samples giving evidence of the long life imparted to track work by the use of manganese steel. The exhibit comprises parts of special track work, such as switches, frogs, crossings, etc., both for steam railroad and street car use. Among the specialties shown are the Wharton improved unbroken main-line switch for steam railroads, and the Wharton unbroken main-line switch for street railways; the Wharton manganese steel frog for steam railroads, the guard rail with manganese steel reinforcement for steam railroads, the manganese steel hard-center work for street railway girder track and the solid manganese steel work for T rail track. The entire exhibit represents the most modern and advanced construction in all parts of special track work, as illustrated by the numerous samples shown.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

CAMBRIA SOUTHERN.

A New Link in the Louisville & Nashville Route to Atlanta.

The incorporation of the Cambria Southern Railway Co. is reported from Knoxville, Tenn., and the purpose, it is said, is to build a new and shorter line for the Atlanta, Knoxville & Northern Railroad from Wetmore, Tenn., to Cartersville, Ga., to avoid the grades and curves of the present route between those points. This will mean the construction of about 75 miles of new line. The incorporators, according to the report from Knoxville, are officers of the Knoxville, LaFollette & Jellico Railroad, which, like the A. K. & N., is in the Louisville & Nashville system. The new road will start from Cain creek, between Wetmore and Cambria. It is said that large shops will be erected at Cambria and a new town made there. The road will cross into Georgia at a point near the Conasauga river.

W. J. Oliver & Co. of Knoxville are reported to have been awarded a contract to rebuild the Atlanta, Knoxville & Northern from Knoxville to Wetmore, about 60 miles. This work, it is said, will cost between \$1,500,000 and \$2,000,000, and it will be done under supervision of J. H. Peyton, chief engineer of construction at Madisonville, Tenn. About 2,000,000 yards of work will have to be moved, and it is stated that this construction will begin immediately, to be completed in 10 months. Some heavy cutting will be necessary.

The Knoxville, LaFollette & Jellico Railroad, which, in connection with the Atlanta, Knoxville & Northern, will form the new route of the Louisville & Nashville between Cincinnati and Atlanta, has begun operating freight trains between Jellico and LaFollette, Tenn., 26 miles, that much track having been completed. It is expected that the entire road to Knoxville will soon be finished.

The Mentor Southern Railway has also applied for a charter to build a line from Mentor to McGhee for the Atlanta, Knoxville & Northern. This line will start from Mentor, on the A. K. & N., and run through Blount, Loudon and Monroe counties, about 20 miles. It will pass through Maryville. The incorporators are J. H. Ringgold, W. H. Oliver, W. L. Pomeroy, J. B. Wright and J. H. Frantz.

MEMPHIS, PARIS & GULF.

New Road to Be Built in Arkansas, Texas and Louisiana.

The Memphis, Paris & Gulf Railroad Co. has applied for a charter in Arkansas to build a line from Memphis to Paris, Texas, passing a short distance south of Little Rock. In Lonoke county a branch line will start and run south via Pine Bluff and Eldorado to the Louisiana State line. The reported purpose of the company is to continue this latter line to the Gulf of Mexico, with various branches. The length in Arkansas will be about 400 miles; capital \$6,000,000, of which \$1,000,000 is subscribed.

Details concerning the line are published as follows: Main line from Memphis to Marianna, Clarendon, Hamilton, Arkadelphia and Nashville, and thence to the Indian Territory boundary. From Hamilton, which is in Lonoke county, the branch to Pine Bluff and Eldorado will start. A connecting line will be built from Daleville, near Arkadelphia, to the branch.

The incorporators of the road are James W. Brown, William K. Ramsey, Walter W. Brown and T. J. Gaughan of Camden,

Ark.; C. C. Henderson, Robert W. Huie, Eugene W. Barkman and George H. Locke of Arkadelphia, Ark.; Ben. F. Thompson of Ruston, La.; C. E. Neeley of St. Louis and T. M. Dodson of Hot Springs, Ark. All of these are directors except Messrs. Barkman and Locke.

The officers are as follows: J. W. Brown, president; W. W. Brown, vice-president; C. E. Neeley, secretary; R. W. Huie, auditor; W. K. Ramsey, treasurer; C. C. Henderson, general manager; T. J. Gaughan, attorney.

President Brown is also president of the Ouachita Valley Bank of Camden, and Mr. Ramsey is cashier of that bank. Mr. Huie is interested in lumber in both Arkansas and Louisiana. It is further stated that the promoters of this road built and controlled the Arkansas Southern Railroad until it was sold to the Iron Mountain line. Mr. Henderson, the general manager, was formerly general manager of the Arkansas Southern.

ST. JOE TO DES MOINES.

A New Steam and Electric Road Which Will Enter Coal Fields.

Messrs. F. S. Mordaunt & Co., 107 Washington street, Chicago, Ill., write the Manufacturers' Record as follows:

"The St. Joseph, Albany & Des Moines Railroad will be built from St. Joseph, Mo., to Des Moines, Iowa, a distance of 180 miles main track, with an extension of 20 miles into the coal fields of Iowa, and sidings of about 30 miles, making 230 miles of construction. It will be built with a 1 per cent. grade, 80-pound steel, and will be principally a freight railroad. There will be through passenger service between Des Moines and St. Joseph and St. Joseph and Des Moines. Between Des Moines and Winterset, 40 miles, and between St. Joseph and Albany, Mo., 53 miles, interurban service will be furnished.

"The company is thoroughly financed. The money is ready for construction, and the second corps of surveyors are now in the field. As soon as all right of ways have been procured on the line of the road it is expected to do grading for as great a distance as possible before the cold weather sets in.

"The officers of the company are F. S. Mordaunt, president and general manager; L. Peery, vice-president; Wallace Hubbard, secretary, and J. Thomas, treasurer.

"The present general offices are in Chicago. All communications should be addressed to F. S. Mordaunt, president, Chicago, Ill."

The line will be operated by both steam and electricity.

Birmingham, Columbus & St. Andrews.

From an officer of the line the Manufacturers' Record has received information concerning the Birmingham, Columbus & St. Andrews Railroad, saying that the construction which has begun, as noted in last week's Manufacturers' Record, between Chipley, Fla., and St. Andrews, Fla., will be pushed forward with a large force until completed. The charter was obtained in Alabama in March, 1903, and the survey and location of the line was begun in April immediately following. Mr. L. E. Miller of Cape May, N. J., has the contract for building as well as for financing the whole line, and has so far succeeded as to be able to put a large force at work. From now on construction will be pressed with all possible haste. The road will traverse one of the finest sections of the South, and when completed will have nearly 400 miles of track. Its entire length in Florida will be through pine forests, and when the timber is cut one of the best agricultural sections will be opened for settlement. St. Andrews

bay is a large body of water on the Gulf coast, with sufficient depth for large vessels and of an extent to handle an immense commerce. The country to be opened is healthful and the soil fertile, being adapted to the culture of all kinds of fruit and vegetables. Information concerning the line may be obtained from Mr. W. O. Butler, Sr., attorney at Chipley, Fla. The president is W. M. Gordon of Columbus, Ga., and he also has an office at Chipley.

Conway, Coast & Western.

Concerning the Conway, Coast & Western Railroad, a description of which was published in last week's Manufacturers' Record, Mr. Robert B. Scarborough, attorney-at-law, writes from Conway, S. C., to the Manufacturers' Record as follows:

"Conway is the home office which bids fair to be one of the most important short railroad lines in this section of the country. The Conway Seashore Railroad Co. has recently amended its charter and purposes extending its road eastward from Conway to Southport, N. C., and westward from Conway to Sumter, S. C., with possibly a branch line from Conway to Marion, S. C.

"The promoters of this enterprise and those actively pledged to its construction are F. A. Burroughs, president of the company; Col. D. A. Spivey, cashier of the Bank of Conway; Arthur M. Burroughs, secretary and treasurer of the Conway Lumber Co., and Congressman Robert B. Scarborough, general counsel for the road.

"The projected line will traverse a country rich in timber supplies, and the agricultural possibilities of this section are great. There is a fine opportunity for investment in lands throughout this entire section. The road will cost about \$1,000,000."

FRISCO MAY GET IT.

Rumored That the Mobile, Jackson & Kansas City Will Be Absorbed.

According to a rumor from Memphis, Tenn., the Mobile, Jackson & Kansas City Railroad will probably be absorbed by the Frisco system, with which it connects at New Albany, Miss. The line is now under construction between Pontotoc and Newton, Miss., and such a road, when completed, would give the Frisco an independent line to Mobile, on the Gulf of Mexico.

The Mobile, Jackson & Kansas City is now in operation from Mobile as far north as Newton, Miss., with a branch to Hattiesburg, where it connects with the Gulf & Ship Island Railroad. The company has a large wharf and valuable terminals at Mobile. Col. Frank B. Merrill was president of the road and actively pushed it until about a year ago, when other interests came into control, and W. D. Stratton of New York is now president. The report of the company for the quarter ended June 30 shows a large increase in business as compared with the corresponding quarter of last year.

To Mountain Timber Lands.

With reference to a report that its lumber railroad would be extended to Parsons, W. Va., the Preston Lumber & Coal Co. of Oakland, Md., writes the Manufacturers' Record as follows:

"We are now constructing a 12-mile extension from Crellin, Md., to the headwaters of the Youghiogheny river. Our junction point with the Baltimore & Ohio is Hutton, Garrett county, Maryland. This line of track extends through Garrett county, Maryland, into Preston county, West Virginia. We do not contemplate extending this line of track to connect with the West Virginia Central at Parsons, although the same is not impossible.

"We own a considerable body of timber land on the west slope of Backbone mountain and Horseshoe run, a tributary of Cheat river. This road will eventually be extended as our timber operations warrant. We will build this line ourselves, and there will be no opening of bids for construction and for the furnishing of equipment, etc. We have about all the rolling stock needed for the present, and will order supplies, tools, etc., as needed."

Lumber Line Finished.

The Grayson Lumber Co. is reported to have completed its railroad, the Virginia & Southern, from Sugar Grove, in Smyth county, Virginia, to Woodmont, in Grayson county. This gives an outlet for lumber via the Marion & Rye Valley Railway from Sugar Grove to Marion, on the Norfolk & Western. The Grayson Lumber Co. is reported to have several large sawmills at Woodmont, and others will soon be started, the place being in the middle of 20,000 acres of timber land owned by the company. The Douglas Land Co., it is reported, will also cut its timber and ship it from Woodmont.

CARS FOR COAST LINE.

South Baltimore Steel Car & Foundry Co. to Build Them.

The South Baltimore Steel Car & Foundry Co. has been awarded a contract to build 500 ventilated box cars, 36 feet long and of 60,000 pounds capacity each, for the Atlantic Coast Line. They will cost about \$450,000, and are to be delivered as soon as they can be completed. The contract was secured in competition with other bidders.

Memphis to Pensacola.

The Memphis & Pensacola Railroad Co. has applied for a charter at Jackson, Miss., to build a line from Memphis, Tenn., to Pensacola, Fla., by the most direct route, about 350 miles, via Meridian, Miss. The incorporators are E. T. Haines, G. A. Scott and W. C. Roberts of New York city and I. F. Woodruff of Kinderhook, N. Y. It is proposed to complete the line within two years.

Drum Point Road Sold.

The Baltimore & Southern Railroad—the Drum Point line—has been sold under a deed of trust for \$50,000 to Edward Lauterbach of New York, who held a mortgage on it for \$55,000. The property of the company consists principally of rights and franchises, and the grading done. The line was planned to extend from Baltimore to Drum Point, Md., near the mouth of the Patuxent river, about 80 miles.

Sale of Road Confirmed.

A dispatch from Brunswick, Ga., says that the Superior Court has confirmed the sale of the Brunswick & Birmingham Railroad for \$1,000,000 to Bird M. Robinson of New York, formerly the president of the company, who, it is said, will turn the property over to the Atlantic & Birmingham Railroad, which has operated it for several months.

The Seaboard's Birmingham Line.

Mr. John Skelton Williams, chairman of the board of directors of the Seaboard Air Line, is reported as saying that the Birmingham extension will be opened from Atlanta to Pell City within a week, and that the rest of the road, 30 miles, from Pell City to Birmingham, will be in operation in three months.

Railroad Notes.

The Tennessee Central Railroad Co. has begun the work of improving its Front street passenger station at Nashville, Tenn.

The Norfolk & Western Railway will, it is reported, build another coal pier at Lambert's Point, Va., to handle its increasing coal trade.

The Birmingham Belt Line is building an extension of five miles to the sewer-pipe works at North Birmingham, and also to other industries. The line will also reach Thomas and the furnaces of the Republic Iron & Steel Co.

A dispatch from Pascagoula, Miss., says that W. Denny & Co. of Moss Point have been granted a franchise to build a lumber railroad, standard gauge and about 40 miles long. It will connect with the electric line of the Pascagoula Street Railway & Power Co. at Moss Point.

The Port Arthur & Southern Electric Railway Co. has been granted a franchise to build its line along the public road from Port Arthur, Texas, to the docks, about three miles. George Woodward, D. L. Birch and John A. Young are interested. Construction is to begin within four months, and the line is to be finished in two years.

Mr. Woolsey Finnell, civil engineer, writes from Tuscaloosa, Ala., to the Manufacturers' Record that he has a contract for about one and one-quarter miles of work at Meridian, Miss. The Mobile & Ohio Railroad is building to the Meridian Fertilizer Co.'s plant, where its line connects with the New Orleans & Northeastern Railroad.

The Galveston, Houston & Henderson Railway has nearly completed its new freight depot in Galveston, and the freight department will probably occupy its quarters by the end of this month. The building is constructed of light-colored brick with stone trimmings. The Missouri, Kansas & Texas and the International Great Northern lines will also use the station.

O. H. Guion, according to a report from Newbern, N. C., says that W. A. Cullen of New York, contractor for the Pamlico, Oriental & Western Railway, will immediately begin construction with a large force to build the line from Newbern to Bayboro, Oriental and other points. A contract for 5000 tons of rails has been awarded. The line is to be in operation to Bayboro by November 1 and to Oriental by May 1 next. The entire road must be finished by November 1, 1905.

World's Fair Cattle Building.

In the erection of the 38 buildings for the World's Fair live-stock show 3,000,000 feet of lumber was used, requiring 150 cars to bring it to the ground.

To hold this immense amount of material together in the shape of the buildings that cover the 40 acres included in the live-stock section required one carload of nails and the effort of a force of 350 carpenters and 250 laborers. The total amount of material on the ground, which will be utilized by the time the buildings are completely finished, is 220 carloads.

Of this 10 carloads will be tanbark for the flooring of the live-stock forum or exhibit arena. In 60 cars will be cinders for the walks that will lead from one building to another. The total length of the walks will be four miles.

Of the 38 buildings, 32 are stock barns, ranging from 75 to 300 feet long, with a width of 41 feet. The review park is 175x100 feet, and will be used for the exhibition of animals after the awards have been made. The Forum, the largest building on the live-stock grounds, is 50x500 feet, and has a seating capacity of 11,000. Congress Hall, in which the offices of the Live-Stock Department will be located, and in which the experimenting in animal husbandry will take place, has a seating capacity of 800.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

Etowah Mills Awards Building Contracts.

The Etowah Mills of Greensboro, N. C., has awarded contract to the J. F. Gallivan Building & Construction Co. of Greenville, S. C., and Palmer, Mass., for the construction of the mill buildings for the proposed plant. These buildings will cost about \$100,000, and the contract requires their completion by February 1, 1905. The main structure will be two stories high with basement, 120x302 feet; another building will be two stories high, 136x252 feet; the dyehouse and finishing building will be erected separately, but connected with the main structure, each to be two stories high, 40x136 feet; the boiler and engine room will be 52x104 feet; smoke-stack connected with power-house will be 150 feet high, for a six-foot draft, sufficient for 1000 horse-power. Other buildings for warehouses, operatives' cottages, etc., costing probably another \$100,000, will be contracted for later on. The Etowah Mills is a \$1,000,000 corporation, and reference has been frequently made to the enterprise in these columns. It is to install, as stated in the Manufacturers' Record of July 21, an equipment of 7500 mule spindles and 500 looms to begin manufacturing with, and later is to double the spindles. Fine, medium and coarse-grade goods (cotton cloth) will be manufactured. J. E. Sirrine of Greenville, S. C., is the mill architect and engineer in charge. W. I. Young, who originated the enterprise and promoted the company to its present condition, is president and general manager.

To Double a 12,000-Spindle Mill.

The Drayton Mills of Spartanburg, S. C., operating 12,440 spindles and 300 looms on the production of fine cotton cloth, will double its present plant. The company has made this decision and engaged Messrs. Lockwood, Greene & Co. of Boston, Mass., as architects and engineers in charge of the construction work. This firm will immediately prepare the plans and specifications and proceed with the contract. The Drayton Mills has a capital stock of \$250,000, and its product is fine sheetings. Its mill was built last year, and that it has been successfully operated is evident by the company's announcement to enlarge.

Exposition Mills Enlarging.

The Exposition Cotton Mills of Atlanta, Ga., has begun construction work to provide improvements to its plant. Mill No. 1 is being remodeled and a one-story wing is being changed to a two-story structure, which will give an increased floor space of about 275x100 feet. The company is also erecting an addition to its picker-room and machine shop, and the completion of these improvements will give sufficient floor space to add about 9000 spindles, the necessary looms to suit, and other machinery. All the contracts have been awarded.

Brazos Valley Cotton Mills.

Articles of incorporation have been filed by the Brazos Valley Cotton Mills of West, Texas, with a capital stock of \$100,000, the incorporators being Messrs. T.

M. West, J. H. Jones, E. G. Blume, Geo. N. Denton and B. B. Ingraham, all of West; James T. Brock and W. D. Lacey of Waco, Texas. Mr. West recently purchased the West Cotton Mills for \$90,000, and the new company will acquire and operate that plant. There are about 4160 spindles and 200 looms in the mill.

Completing Greenwood Mill No. 2.

Reference was made last week to the Greenwood Cotton Mills of Greenwood, S. C., as completing its No. 2 plant, under construction for some months. The company's additional mill is to be equipped for the present with 10,750 spindles and 300 looms for manufacturing 30-inch 5.15-yard goods, and the machinery is now being put in position. All contracts have been awarded. Messrs. Lockwood, Greene & Co. of Providence, R. I., were the architects in charge.

To Weave Mosquito Netting.

Messrs. Dozier & Co. of Athens, Ga., were referred to in June as contemplating the establishment of a mosquito netting mill. They have now definitely decided to locate the enterprise, and have secured a suitable building. Looms for weaving cotton netting and similar products will be installed, and it is stated this machinery has not been purchased as yet. The firm will use electricity for motive power.

A \$100,000 Company Chartered.

Application has been filed for a charter of incorporation for the Marion Cotton Mills of Marion, S. C., the capital stock to be \$100,000, nearly all of which has been subscribed. The company will establish a cotton factory, possibly purchasing and enlarging the Ashby Cotton Mills, a plant of 3000 spindles. William Stackhouse of Dillon, S. C., will be president and treasurer.

Textile Notes.

It is reported that the Belton Cotton Mills of Belton, Texas, will double its plant of 3121 spindles and 100 looms.

The Chamber of Commerce of Huntsville, Ala., held its monthly meeting last week, and the organization's president, James R. Boyd, announced that a cotton rope and twine mill will be built.

The Virginia Woolen Co. of Winchester, Va., is progressing with the rebuilding of its mill, recently destroyed by fire. The new mill will have an equipment of four sets of cards and 24 looms, to be operated by steam-power, and the raw stock will be dyed.

Dispatches state that Louis B. Magid of Tallulah Falls, Ga., has arranged for the necessary machinery to establish a large silk mill, and that water-power will be developed to transmit energy by electricity for the purpose of operating the mill and other factories.

Messrs. T. N. & J. W. Smith, mentioned last week as having purchased the Tennille Cotton Mills at Tennille, Ga., will expend about \$15,000 to overhaul and improve the plant. They intend to operate the mill, which has about 4000 spindles, for yarn manufacture.

The new machinery to be installed by the J. E. Smith Cotton Manufacturing Co. of Thomson, Ga., referred to last week, will give the mill a total of about 6000 spindles and 200 looms. The company has awarded all contracts, and the work of enlarging is progressing steadily.

The Loray Mills of Gastonia, N. C., has awarded contract for the 32,000 spindles, 840 looms, 90 cards and other machinery necessary to fill its building with machinery. This is in accordance with the decision of the stockholders announced in May. The new equipment has begun

to arrive, and is being rapidly placed in position. There will be over 50,000 spindles and about 1700 looms in operation in this mill by the end of September.

The First National Bank and the Corsicana National Bank, both of Corsicana, Texas, will not operate the Corsicana Cotton Factory which they purchased, as referred to last week. They will sell the plant to a new company, provided the old stockholders do not take advantage by August 25 of an option given them.

The Trenton Cotton Mills of Trenton, Tenn., recently mentioned as sold to satisfy a mortgage, has now been purchased by Leon Freed, Mrs. Anna Landis and the Gibson County Bank, all of Trenton, who will organize a company to overhaul and operate the plant. There are about 6000 spindles and 160 looms in position. The Gate City Cotton Mills of Atlanta, Ga., was recently noted as having begun the erection of an addition 50x100 feet in size. This enlargement will complete the company's carding and spinning-room, and the preparatory machinery to be installed will supply the mill's 10,000 spindles without the necessity of operating at night, as has been the practice. The company uses steam-power. Its dyehouse, heretofore never put in operation, will probably be operated.

The Lang Manufacturing Co. of West Point, Ga., referred to last week, has obtained its charter of incorporation under the laws of Alabama. Its recent purchase of a three-story building 280 feet long at Lanett, Ala., is an extension of the present mill, and the machinery is now being installed. The Lanett mill will be No. 1, for dyeing, bleaching and spinning, and the West Point mill will be No. 2, for weaving and shipping. As previously stated, the company will manufacture lap robes, portieres, toweling, etc.

The Pacolet Manufacturing Co. of Pacolet, S. C., has completed all the reconstruction work on its No. 3 mill, which was practically destroyed by the Pacolet valley flood in the spring of 1903. Site has been cleared for the erection of the No. 5 mill, but it is probable that this plant will not be built until next year. The company has also completed a large independent cloth hall to handle the product of all the Pacolet mills. Messrs. Lockwood, Greene & Co. of Boston, Mass., are the mill architects and engineers in charge for the Pacolet Manufacturing Co.

QUOTATIONS OF COTTON YARNS.

By Paulson, Linkroom & Co., New York, Philadelphia and Chicago, August 16.

No. 10s-1 and 12s-1 warps.....	15 @—
No. 14s-1 warps.....	15½ @—
No. 16s-1 warps.....	15½ @ 15%
No. 20s-1 warps.....	16 @—
No. 22s-1 warps.....	16½ @—
No. 26s-1 warps.....	17 @—
No. 6s to 10s yarn.....	15 @—
No. 12s-1.....	15½ @—
No. 14s-1.....	15½ @—
No. 16s-1.....	16 @—
No. 20s-1.....	16 @—
No. 22s-1.....	16½ @—
No. 26s-1.....	17 @—
No. 8s-2 ply soft yarn.....	15½ @—
No. 10s-2 ply soft yarn.....	16 @—
No. 8s-2 ply hard.....	15½ @—
No. 10s-2 ply hard.....	15½ @—
No. 12s-2 ply.....	16 @—
No. 14s-2 ply.....	16½ @ 15%
No. 16s-2 ply.....	16 @—
No. 20s-2 ply.....	16½ @—
No. 24s-2 ply.....	17 @—
No. 26s-2 ply.....	17½ @—
No. 28s-2 ply.....	17½ @—
No. 40s-2 ply.....	22 @ 22½
No. 8s-3, 4 and 5 ply.....	15 @—
No. 20s-2 ply chain warps.....	17 @—
No. 24s-2 ply chain warps.....	17½ @—
No. 26s-2 ply chain warps.....	18 @ 18½
No. 16s-3 ply hard twist.....	16 @—
No. 20s-3 ply hard twist.....	16½ @—
No. 26s-3 ply hard twist.....	17½ @—

The National Acid Co. of New Orleans has purchased for \$13,000 the Swan Creek (Tenn.) phosphate land of J. H. Brown.

In Birmingham and its suburbs during the past four years 9512 houses have been built, costing \$13,800,125.

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Southern Timber Studies.

This field season the bureau of forestry will complete certain studies of important commercial trees in the South. The species under investigation are yellow poplar, white, red, black and chestnut oak, chestnut, white pine and hemlock. A great mass of data has been collected as a basis for tables showing the proportion of these species in various types of the Appalachian forest, the volume of merchantable timber and the rate of growth of the several species. This season trained men of the bureau will pay special attention to the silvicultural characteristics and the commercial possibilities of these trees. They will also apply the information collected by the bureau in the last two years, embodying it in practical suggestions for conservative forest management by timber-land owners of the South.

The aim of a commercial tree study is to secure the information necessary for the successful application of forestry where the tree forms an important part of the forest crop. It involves, among other things, knowledge of its methods of reproduction, that it may continue to form a part, and very likely a larger part, of the forest, instead of being replaced, when lumbered, by less available trees; of its rate of growth, on which depends the calculation of future returns; of the conditions of light, soil, moisture, etc., under which it flourishes best; of its ability to compete with the various other species with which it is associated in the various types of forest in which it occurs, and what management can do to improve conditions for it; of when it will pay to plan for it as part of a permanent timber-producing forest, and of how it ought to be lumbered to secure the largest present and future returns. In the light of the knowledge which such studies furnish, the forester is in a position to make an intelligent working plan for tracts in which the trees studied form, or can be made to form, a valuable part of the stand of timber. In that case lumbering does not mean ruining the forest, denuding the ground and leaving it barren or to grow up in worthless brush, but a regular timber output, while the forest constantly improves in character and the value of its growth.

Acting under its general co-operative offer, the bureau of forestry is now preparing detailed working plans for several tracts of timber belonging to private owners in the States of West Virginia, Kentucky, Tennessee and North Carolina. Three of the problems of management presented may be briefly indicated. In Kentucky the owner of a 40,000-acre tract wishes to retain a large part of the property in forest for continuous production of railroad ties. In West Virginia a 30,000-acre tract, the property of a mining company, must be made to maintain a permanent supply of timbers for use in the mines. In the same State another working plan for 5000 acres of timber land aims to secure a steady income from the sale of the timber grown.

The problems of management presented the bureau differ with changing forest conditions and with the various purposes of the owners. The bureau field force examines the forest and counts and measures the trees to determine the stand of each species, the rate of growth, and both present and prospective yield in board feet. Having this information, and knowing the habits of growth of the different species, the bureau is then in position to give definite advice as to the proper course to

pursue to attain by management any specified end.

This branch of the bureau's work is of importance not only to the owners of large timber tracts, but as well to those whose holdings consist of merely 50 or 100 acres. The purpose of the bureau is not to benefit any particular owner or set of owners, but to encourage and establish conservative forestry everywhere for the general good of the nation. Individuals derive direct benefits from this work, but the knowledge and experience thus gained by the bureau are for application to whole sections, and contribute to the scientific knowledge and practice of forestry.

There are now 28 experts concluding the commercial tree studies under way in the four States above mentioned.

Pine at Liverpool.

The monthly timber circular for August of Duncan, Ewing & Co. of Liverpool shows that the import of hewn pine was 74,000 cubic feet, the consumption 68,000 cubic feet and the stock 66,000 cubic feet, large average wood being in good demand and prices firmer. The import of sawn timber was 929,000 cubic feet into Liverpool and 358,000 cubic feet into Manchester; the consumption was 685,000 cubic feet in Liverpool and 155,000 cubic feet in Manchester, leaving stocks of 1,034,000 cubic feet in Liverpool and 600,000 cubic feet in Manchester. A cargo was put up at auction early in the month, but only very few lots were sold, though eventually it was cleared out privately at low prices. The importation of boards and planks has exceeded consumption by 28,000 feet, the stock being 359,000 feet in Liverpool and 36,000 in Manchester.

Carloads of Lumber Wanted.

Manufacturers of lumber are advised that Messrs. Willms & Willms, 747 West Pratt street, Baltimore, Md., want the following 4-4 and 5-4 plain and quartered kiln-dried oak cuttings of following lengths: 12, 16, 17, 19½ and 21½ inches; the widths may run from 6½ to 18½ inches. The 5-4 must be clear on both sides; the 4-4 need be clear on one side only. The firm is prepared to buy this lumber in carload lots.

Nut Trees and Hardwood.

One day of the third annual convention of the National Nut-Growers' Association, to be held at St. Louis in October, is assigned to the discussion of nut trees in relation to forestry operations and for the production of hardwood timber. To this session all the organized forestry and lumber associations will be invited to send representatives.

Lumber Notes.

The turpentine operators' convention will meet at Jacksonville, Fla., September 14 and 15.

A tract of 4000 acres of timber land in Perry county, Tennessee, which sold 40 years ago at 10 cents an acre, recently brought nearly \$5 an acre.

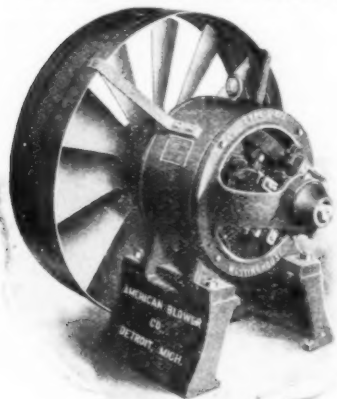
A raft of more than 1,000,000 feet of Louisiana red cypress and long-leaf yellow-pine timber arrived last week at the Picayune saw-mill near Donaldsonville, La., for immediate conversion into lumber.

The assessment for taxation in Shelby county, Tennessee, in which Memphis is situated, is more than \$55,000,000 for this year, an increase of about \$9,000,000 over that of 1902. The increase in the State will be \$25,000,000.

The value of the segregated unleased coal land in the McAlester district of the Choctaw Nation, I. T., is estimated at from \$25,000,000 to \$50,000,000.

MECHANICAL**Combination "A B C" Fan and Motor.**

Attention is called to the accompanying very striking illustration of progress made



COMBINATION "A B C" FAN AND MOTOR

in the line of direct-connected disc fans and motors, the fan being a modification of the well-known American Blower Co.'s "A B C" Fan, which has been on the mar-

This makes by far the most rigid form of construction, and at the same time most compact, the total width of the outfit being no greater than with the overhung type.

The exceptionally high efficiency of both the "A B C" Fan and the Westinghouse Motor, together with the fact that the price is very low, make the outfit unusually desirable for cooling and ventilating.

Further information can be obtained by addressing the Detroit office of the American Blower Co. or any of its branches.

Ellerhorst Steam-Jacket Kettles.

An accompanying illustration presents a view of a steam-jacket kettle made by Messrs. J. G. Ellerhorst & Co. of Cincinnati, Ohio. Hundreds of Ellerhorst kettles are in use in the best-known establishments throughout the country. They are of the highest grade in every respect, and Messrs. J. G. Ellerhorst & Co. is one of the oldest coppersmith firms in the United States.

Gasoline Gas the Coming Light.

Gasoline gas for illuminating and cooking purposes is making steady progress everywhere. It is entirely satisfactory



ELLERHORST STEAM-JACKET KETTLE.

ket perhaps longer than any other, and is in general use.

Previous to the working out of this design the custom has been to attach a motor to the arms of a disc fan, but the excess-



THE WALTHER SYSTEM—(See "Gasoline Gas the Coming Light.")

sive weight of the motor, overhung in this way, has often been an objectionable feature. In this combination the motor is placed on a substantial base, there being no bearings except those in the motor.

kitchen refrigerator or ice box, and is stored in the cellar or basement. There is no gas in the building except that in the pipes, and it takes a very large house to contain as much explosive matter in

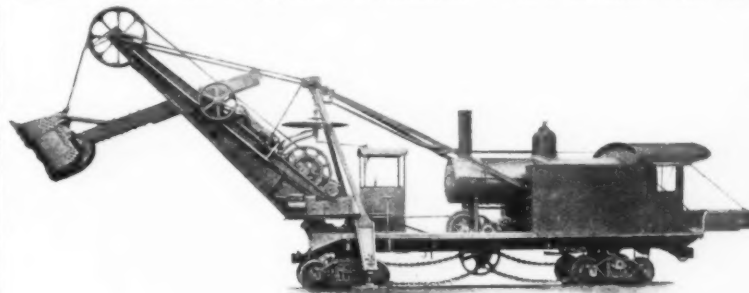
the pipes as is contained in one kerosene lamp. Walther gas plants have been installed in many city residences, where a purer material than the ordinary coal gas was desired for lighting and cooking purposes. An accompanying illustration shows the Walther System.

For a full description of this apparatus, cost, etc., write the Walther Lighting & Heating Manufacturing Co., Davenport, Iowa, which controls the Walther System.

The Atlantic Steam Shovel.

The great expansion that has taken place in power and capacity of locomotives and rolling stock of railways now finds its counterpart in the necessity for corresponding increase in power and capacity of the steam shovel. Ten years ago the standard railway shovel weighed 25 tons and carried a dipper of one and one-half cubic yards capacity. The shovel of today weighs 60 to 70 tons, and has a dipper of two and one-half to three and one-half cubic yards. Shovels are in use which weigh 90 tons and carry a dipper of five cubic yards capacity. More weight and size, however, do not give efficiency in service. Great weight, which is necessary in a locomotive, is a disadvantage in a steam shovel, because it not only makes it cumbersome and difficult to hold on temporary rails and soft ground, but makes it slow of movement.

The steam shovel, of which we illustrate the two-and-one-half-yard dipper size herewith, is a new machine which is being introduced by the Atlantic Equipment Co.



THE ATLANTIC STEAM SHOVEL.

of 25 Broad street, New York. It is built by the American Locomotive Co. from the designs of A. W. Robinson, M. Am. Soc. C. E. This machine is the result of many years' experience in the design and operation of steam shovels and dredging machines, and it includes all the desirable features of the best modern practice in shovel building. This shovel is built on locomotive lines, and the quality of the design and workmanship throughout is fully up to the best class of locomotive construction. A good shovel must be quick in its movements, easily handled and very strong in all its working parts, and constructed so that it cannot get out of order with any kind of handling.

The Atlantic Shovel has been designed to cover the following points as compared with others:

1. Simplicity of design with direct strain, and few and strong parts that will not break or easily get out of order.
2. The highest possible speed and power consistent with safe and effective working.
3. Avoidance of wear and breakage of chains and sheaves.
4. Moderate weight.
5. Better and more efficient boiler for easy steaming and economy of fuel.
6. Direct application of power to the dipper.
7. Better angle of lead, giving more digging power with less pull on dipper.
8. One sheave instead of six.
9. 65 to 85 per cent. greater efficiency.
10. High lift.
11. Short boom, thus reducing the

strains and permitting faster speed of swinging.

12. The employment throughout of the highest quality of design, materials and workmanship and fully equal to the best locomotive practice.

All these points and many others of excellence that are described herein, and that will commend themselves to practical men, are incorporated into this shovel.

The shovel illustrated is one in use by the New York Central & Hudson River Railroad. It is a Class 38-16-2½ machine. Another shovel of this size is at work on the new Pennsylvania Railroad terminal excavation, New York city. This means a shovel having a pull upon the dipper of 38,000 pounds, a clear height of lift of 16 feet and a capacity of two and one-half cubic yards. This system of numbering expresses at once any combination of these three elements in a shovel.

A further description, noting every detail, can be obtained by addressing the Atlantic Equipment Co.

Gasoline Motors for Cuba.

Laine & de Pool of Havana, Cuba, write to the Manufacturers' Record as follows:

"We are greatly interested in the introduction into this island of motors, locomotives, cars and pumps using alcohol as fuel. We have already French, German and Austrian catalogues, but on account of our proximity to your country and the facilities for doing business, we would like to have catalogues, prices and general information of such machines from the

United States. We also desire to know about other devices, such as sadirons, street lamps, house lamps and cooking stoves in which alcohol is used. We have a special inquiry about railroad inspecting cars to be worked with alcohol and to carry from four to six passengers. These cars are made on the automobile system, but carry steel wheels to suit the narrow and standard gauge of the roads used in this country. To the party who can furnish us with such a car we will guarantee a ready sale of a good lot in a little time. We also desire light locomotives run by alcohol for sugar hauling in the plantations. We do not think it difficult to get up such a locomotive, as American genius is very broad, and what is done today with gasoline could be done with alcohol, especially since the German and French have already done it.

"The insistence upon the use of alcohol in this country is because it is the cheapest fuel that can be had. It costs about 8 to 10 cents a gallon less than gasoline, and although the explosive power of the alcohol is not as high as that of gasoline, it is sufficient."

Wants Cotton Goods.

In a letter to the Manufacturers' Record Mr. Bhupati Nath Bhowe, 77 Sitaram Ghoses street, Calcutta, India, writes: "I wish to have connection with manufacturers of cotton goods who can supply gray shirtings, sheetings, drills, etc., with their samples, and I am in a position to begin regularly a big business, and if required will remit."

Construction Department

TO OUR READERS!

In order to understand and follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY.

The MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

* Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ADDRESS FULLY.

To insure prompt delivery of communications about items reported in these columns, the name of one or more incorporators of a newly incorporated enterprise should be shown on the letter addressed to that town, or to the town of the individual sought, as may be shown in the item, as sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. This will help to insure prompt delivery of your communication, although it is inevitable that some failures on the part of the postal authorities to deliver mail to new concerns will occur.

WRITE DIRECTLY.

It is suggested to advertisers and readers that in communicating with individuals and firms reported in these columns, a letter written specifically about the matter reported is likely to receive quicker and more attention than a mere circular.

BALTIMORE BUILDING NOTES.

Business Buildings.

Baltimore—Warehouses.—Henry Marcus & Son, 310 West Pratt street, have awarded contract to Edward D. Preston, builder, Builders' Exchange, 2 East Lexington street, for the construction of two warehouses to be located at Calvert and Water streets and Grant, Water and Hollingsworth streets, after plans and specifications by Haskell & Barnes, architects, Central Savings Bank Building, 3 East Lexington street. Structures to be seven stories high with basement, one 26x81 feet and the other 61x100 feet; mortared brick front with terra-cotta trimmings; concrete foundations; steel beams and girders; cast-iron columns; tin roofing; electric wiring and fixtures; sanitary plumbing; elevators. These buildings previously mentioned.

Baltimore—Store Buildings.—The Woodruff-McLaughlin Company, constructing engineer and architect, 100 East Lexington street, which prepared the plans and specifications for two store buildings for N. S. Pendleton, 529 North Charles street, to be located at southwest corner Fayette and Charles streets, will also superintend the construction of the buildings. Structures to be five stories high with basement, one 30x109 feet and the other 19x75 feet; brick with ornamental terra-cotta cornice and trimmings; concrete foundation; steel beams; mill construction; slag roofing; galvanized-iron skylights; metal frames and sashes; wireglass; vault lights; fireproof stairway; electric wiring and fixtures; sanitary plumbing; steam-heating systems; electric elevators. These buildings previously mentioned.

Baltimore—Warehouse.—Martin Gillet & Co., 1120 Cathedral street, have awarded contract to John Cowan, builder, 106 West Madison street, for the construction of warehouse to be located at Lombard street and Cheapside, after plans and specifications by Mottu & White, architects, 402 St. Paul street. Structure to be six stories high; brick with terra-cotta trimmings; concrete foundation; steel

beams; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevators. This building previously mentioned.

Baltimore—Store Building.—J. Leroy White, 240 West North avenue, has awarded contract to John Waters, builder, 23 East Centre street, for the construction of store building to be located at 117 and 119 East Baltimore street, after plans and specifications by Baldwin & Pennington, architects, 311 North Charles street. Structure to be two stories high with basement and subbasement, 34.9x97.9 feet; brick with limestone trimmings; concrete foundation; reinforced concrete floors and columns; galvanized-iron cornice; electric wiring and fixtures; sanitary plumbing; steam-heating system; freight lifts. This building previously mentioned.

Baltimore—Business Building.—Henry A. Brehm, Brehm lane, near Belair avenue, has purchased a lot, 29x30 feet, on the northeast corner Pratt street and Cheapside, and contemplates improving it with a business building.

Baltimore—Warehouse.—Dr. George Barrie, 1601 23d street, Washington, D. C., has awarded contract to Burnham & Wells, builders, Builders' Exchange Building, 2 East Lexington street, after plans and specifications by Marsh & Peter, architects, 529 13th street, Washington, D. C. Structure to be five stories high with basement, 26.2x107.6 feet; brick with granite base and Indiana limestone trimmings; concrete foundation; steel beams and girders; slag roofing; galvanized-iron cornice, coping and skylight; fireproof vault; pavement lights; fire-escape; prismatic glass; electric wiring and fixtures; sanitary plumbing; steam-heating system; electric elevator. Heating system, electrical work and gaspiping not included in contract. This building previously mentioned.

Baltimore—Store Building.—William C. Gueth, 1628 Federal street, has engaged the Woodruff-McLaughlin Company, constructing engineers and architects, 100 East Lexington street, to prepare the plans and specifications for and construct store building to be located at 611 East Baltimore street. Structure to be three stories high with basement, 20x100 feet; iron-spotted-brick front; granite base; cut-stone and copper trimmings; concrete foundation; steel beams; tin roofing; prismatic glass; electric wiring and fixtures; sanitary plumbing; steam-heating system; elevator.

Baltimore—Office Building.—The Maryland Casualty Co., 625 St. Paul street, has awarded contract to the Murphy Construction Co., builder, 202 West Fayette street, for the construction of its office building to be located on North street, from Baltimore to Fayette street, after plans and specifications by Parker & Thomas, architects, 612 North Calvert street. Structure to be three stories high with basement, 40x210 feet; brick with terra-cotta trimmings; concrete foundation; steel frame fireproof construction; slag roofing; skylights; fireproof vaults; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevator. This building previously mentioned.

Baltimore—Warehouse.—The Keyser estate, 14 East Mt. Vernon Place, has awarded contract to Henry Smith & Sons Co., builder, 116 South Regester street, for the construction of warehouse to be located at southwest corner of Baltimore and Hanover streets, after plans and specifications by Sperry, York & Sawyer, architects, Builders' Exchange Building, 2 East Lexington street. Structure to be five stories high with basement, 24.6x90 feet; brick with terra-cotta trimmings; concrete foundation; steel beams; tin roofing; metal ceilings; metal frames and sashes; wireglass; fire-escape; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevator. This building previously mentioned.

Baltimore—Apartment-house.—Preliminary plans have been prepared by Wm. J. Beardsley, architect, 28 West Lexington street, for a proposed apartment-house for Gilbert & Johnson, 301 St. Paul street, to be located at southwest corner of Franklin and St. Paul streets. Structure is to be seven stories high with basement, 60x90 feet; gray and buff brick front; concrete foundation; steel-frame construction; fireproof throughout; wrought-iron balconies; electric wiring and fixtures; sanitary plumbing; steam-heating system; electric elevators; electric generating plant.

Baltimore—Store Building.—Edward B. Eisenbrandt, 222 St. Paul street, has awarded contract to Farley & Monmonier, builders, 17 North Frederick street, for the construction of store building to be located at

424 East Baltimore street, after plans and specifications by Ellicott & Emmart, architects, 323 North Charles street. Structure to be three stories high, 22x66 feet; brown iron spotted brick with granite base; concrete foundation; steel beams; copper bow windows, balustrade and cornice; slag roofing; pavement lights; galvanized-iron skylight; prismatic glass; metal frames and sashes; wireglass; electric wiring and fixtures; sanitary plumbing; steam-heating system; electric elevator. Elevator and heating system not included in contract. This building previously mentioned.

Baltimore—Store Building.—Plans and specifications for the store building to be located at northeast corner Baltimore and Charles streets for the Ward estate, Henry V. Ward, agent, Park avenue and Centre street, will be distributed for estimates on construction this week by Parker & Thomas, architects, 612 North Calvert street.

Baltimore—Warehouses.—Further details have been obtained concerning the two warehouses for the Central Metal & Supply Co., southeast corner of Holliday and Centre streets, to be located at 611, 613 and 615 East Lombard street, after plans and specifications by Albert S. Watts, architect, Pikesville, Md. Structures to be four stories high, 44.6x90 feet; brick with granite base and brownstone trimmings; concrete foundations; steel beams; cast-iron columns; tin roofing; galvanized-iron cornices; fire shutters; vault doors; sanitary plumbing; gas fixtures. Elevators not included in contract. Henry Smith & Sons Company, 116 South Regester street; John Waters, 23 East Centre street; George Bunnecke & Sons, 26 St. Paul street; Henry S. Rippel, 7 Clay street; Joseph Schamberger, 224 Boyer street, and J. H. Miller, 110 Dover street, have been selected to bid on the construction. Bids to be in August 27.

Baltimore—Warehouse.—Plans and specifications have been distributed by J. Franklin Stuckert & Son, architects, 1421 Chestnut street, Philadelphia, Pa., for warehouse to be located at 33 and 35 South Charles street. Structure to be four stories high with basement, 40x80 feet; brick with stone trimmings; concrete foundation; steel beams; mill construction; slag roofing; galvanized-iron cornice; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevator. Bids are to be in August 22.

Baltimore—Warehouse.—C. H. Anderson & Co., 308 South Charles street, has awarded contract to Henry S. Rippel, builder, 7 Clay street, for the construction of warehouse to be located at 119 and 121 South Calvert street, after plans and specifications by Herbert G. Crisp, architect, Builders' Exchange Building, 2 East Lexington street. Structure to be four stories high, 30x54 feet; brick with terra-cotta trimmings; concrete foundation; steel beams; slag roofing; mill construction; electric wiring and fixtures; sanitary plumbing; steam-heating system; electric elevator. Electrical work, heating system and elevators not included in contract. This building previously mentioned.

Baltimore—Store Building.—J. E. Laferty, architect, Builders' Exchange Building, 2 East Lexington street, has distributed for estimates on construction plans and specifications for store building to be located at 219 East Baltimore street. Structure to be three stories high with basement, 17.2x102.6 feet; brick with granite base and limestone trimmings; concrete foundation; steel beams; tin roofing; galvanized-iron cornice; granolithic pavement; metal frames and sashes; wireglass; electric wiring and fixtures; sanitary plumbing; steam-heating system; hand elevator. Heating system not included in contract. Wm. Steele & Sons, 17 West Saratoga street; John Hiltz & Son, 3 Clay street; Wm. Ferguson & Bro., 214 Clay street; George F. Palne & Son, Philadelphia, Pa.; J. H. Miller, 110 Dover street, and Wm. H. Porter & Son, 505 Forrest street, have been selected to bid on the construction. Bids to be in August 22.

Baltimore—Warehouse.—S. S. Janney, 201 North Calvert street, as trustee for the Janney heirs, has awarded contract to Tatterton & Thuman, builders, Pratt and Greene streets, for the construction of warehouse to be located at 129 East Pratt street, after plans and specifications by Archer & Allen, architects, Central Savings Bank Building, 3 East Lexington street. Structure to be four stories high, 41.8x91.9 feet; brick with stone trimmings; concrete foundation on piling; steel beams; cast-iron columns; slag roofing, galvanized-iron cornice; electric wir-

ing and fixtures; sanitary plumbing; elevator. Electrical work and elevator not included in contract. This building previously mentioned.

Baltimore—Store Building.—The Safe Deposit & Trust Co., 13 South street, as trustee, has commissioned Parker & Thomas, architects, 612 North Calvert street, to prepare plans and specifications for store building to be located at 13 North Charles street. Structure to be of brick with terra-cotta trimmings; concrete foundation; steel beams; tin roofing; electric wiring and fixtures; sanitary plumbing; steam-heating system. Thomas L. Jones & Son, builders, 410 West Saratoga street, have the contract for construction.

Baltimore—Warehouse.—E. B. Hunting, 213 Courtland street, has awarded contract to J. H. Walsh & Bro., builders, 496 South Charles street, for the construction of warehouse to be located at 108 and 110 South Frederick street, after plans and specifications by Edward L. Walsh, architect, 496 South Charles street. Structure to be three stories high, 44.7x78.5 feet; brick with stone trimmings; concrete foundation; steel beams; slag roofing; galvanized-iron cornice; electric wiring and fixtures; sanitary plumbing; elevator. This building previously mentioned.

Baltimore—Dwellings.—Thomas D. Summers, builder, 1902 Boone street, will erect for himself eight dwellings to be located on Auchenoroly Terrace, near Bryan avenue. Structures to be three stories high, 15, 16 and 18x46 feet; brick with marble base and trimmings; concrete foundation; tin roofing; galvanized-iron cornices; gas fixtures; sanitary plumbing; furnace-heating systems; cost to be about \$28,800.

Baltimore—Warehouse and Freight Sheds. The Baltimore & Ohio Railroad Co. has awarded contract to James Stewart & Co., builders, 319 North Charles street, for the construction of warehouse and inbound and outbound freight sheds to be located on South Eutaw street. Inbound freight shed is to be one story high, 51x234 feet; the outbound freight shed one story high, 22x512 feet. The warehouse is to be eight stories high, 51x116 feet; brick with limestone trimmings; concrete foundations; cast-iron columns; slag roofing; fireproof shutters; fire escape; galvanized-iron skylights; sanitary plumbing; two four-ton Fairbanks platform scales. Elevators, rolling lift doors, fire doors and lighting, heating and sprinkler systems not included in contract; cost of buildings to be about \$250,000. These buildings previously mentioned.

Baltimore—Warehouse.—Benjamin Perlman, 225 Callow avenue, has awarded contract to George B. Cunningham, builder, 103 Mercer street, for the construction of warehouse to be located at 116 South Gay street, after plans and specifications by Louis Levi, architect, Central Savings Bank Building, 3 East Lexington street. Structure to be four stories high, 25x33 feet; Pompeian brick front with granite base and architectural terra-cotta trimmings; concrete foundation; steel beams; tin roofing; prismatic glass; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevator. This building previously mentioned.

Baltimore—Hospital.—The board of trustees of the Church Home and Infirmary, Broadway and Fairmount avenue, have awarded contract to the Woodruff-McLaughlin Company, constructing engineer and architect, 100 East Lexington street, for the construction of addition to its hospital, after plans and specifications by Wyatt & Nolting, architects, Builders' Exchange Building, 2 East Lexington street. Structure to be two stories high with basement and subbasement, 43.3x108.19 feet; brick with terra-cotta and limestone trimmings; concrete foundation; granite base; steel beams and girders; cast-iron columns; slate roofing; galvanized-iron cornice; interior marble and tile work; cast-iron stairway; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevator. Electrical work, plumbing, heating system and elevator not included in contract. This building previously mentioned.

Manufacturing Buildings and Other Enterprises.

Baltimore—Coffee-roasting Plant.—The C. D. Kenny Company, Lexington and Greene streets, has awarded contract to J. J. Walsh & Son, builders, 1529 Maryland avenue, for the construction of its coffee-roasting plant to be located on Eutaw street, near Barre, after plans and specifications by Tormey &

Leach, architects, 325 St. Paul street. Structure to be five stories high with basement, 50x100 feet; brick with stone trimmings; concrete foundation; steel beams and girders; cast-iron columns first and fifth floors, and roof to be of fireproof construction; slag roofing; galvanized-iron cornice; metal frames and sashes; wireglass; galvanized-iron skylights; electric wiring and fixtures; sanitary plumbing; steam-heating system; electric elevators; engine; boiler; coffee-roasting machinery; pulleys, shafting, etc.; cost to be about \$75,000. This building previously mentioned.

Baltimore—Jewelry.—The Charles C. Crooks Company has been incorporated, with an authorized capital stock of \$10,000, for engaging in the wholesale and retail jewelry business, by Charles C. Crooks, 203 North Liberty street; Alexander Hamill, Robert Ferguson, Joseph K. Snyder, 416 East 23d street, and Walter I. Dawkins.

Baltimore—Commission Business.—The Coulbourne Bros. Co. of Baltimore has been incorporated, with a proposed capital stock of \$20,000, for dealing in fish, oysters, vegetables, etc., by Wm. T. Coulbourne and Samuel H. Coulbourne of Lancaster county, Virginia; R. Weldon Howeth, 1043 West Fayette street; Wm. J. Whittington and T. Erton Coulbourne, 13 East Camden street.

Baltimore—Manufacturing Plant.—The Woodruff-McLaughlin Company, constructing engineer and architect, 100 East Lexington street, which prepared the plans and specifications for manufacturing plant for the International Syndicate Co., 17 and 19 Little Sharp street, to be erected at 213, 215 and 217 North street, will also superintend the construction of the building. Structure to be six stories high, 50x100 feet; brick with cut-stone trimmings; concrete foundation; steel beams; cast-iron columns; slag roofing; electric wiring and fixtures; sanitary plumbing; steam-heating system; electric elevator; boiler; engine. This building previously mentioned.

Baltimore—Coaling and Lighterage Company.—The International Coaling & Lighterage Co. has been organized by the election of the following officers: John W. Snyder, Masonic Temple, Charles street, president; Howard Tebb, Builders' Exchange Building, 2 East Lexington street, vice-president; Frank L. Hancock, Anne Arundel county, Maryland, secretary and treasurer; directors, John W. Snyder, Robert Ramsay, 326 St. Paul street; Harry P. Lucas, 303 Courtland street; Howard Tebb and Frank L. Hancock. The company controls the Chas. G. Day patent for loading coal on ships, and will operate in all the leading seaport cities.

Baltimore—Publishing Company.—R. L. Polk & Co. have been incorporated for the publication of the Baltimore City Directory, Business Directory and the Maryland Gazetteer by Irvine Keyser, 14 East Mt. Vernon place; Randolph Barton, 207 North Calvert street; E. T. Mudge, 113 Hopkins place; Randolph Barton, Jr., and R. L. Polk, 726 North Howard street.

Baltimore—Cloth-sponging Plant.—Julius Rothholz, 410 West German street, has awarded contract to John A. Sheridan Co., builder, 321 North Holliday street, for the construction of cloth-sponging plant to be located at 515 West Lombard street, after plans and specifications by Louis Levi, architect, Central Savings Bank Building, 3 East Lexington street. Structure to be three stories high with basement, 31x176 feet; brick with granite base and brownstone trimmings; concrete foundations; steel beams and girders; cast-iron columns; slag roofing; fire shutters; galvanized-iron cornice and skylight; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevator. Heating system, elevator, boiler, engine, office partitions, electrical work, gas and electric fixtures not included in contract. This building previously mentioned.

Baltimore—Mantel Factory.—The Broadbent & Davis Mantel Co., mantel manufacturer, Canton avenue and President street, has awarded contract to J. J. Walsh & Sons, builders, 1529 Maryland avenue, for the construction of manufacturing plant to be located at East Falls avenue, President and Aliceanna streets. Structure to be five stories high, 86x126 feet; brick with stone trimmings; concrete foundation; steel beams; cast-iron columns; slag roofing; sanitary plumbing; steam-heating system; power elevators; woodworking machinery. This building previously mentioned.

Baltimore—Glass Works and Box Factory.—The Nivison Glass Co. has been incorporated, with a capital stock of \$100,000, for the purpose of manufacturing glass bottles and similar articles, etc. The company was reported some months ago in this column as having awarded contracts for the erection and equipment of its plant, and the work has

since been in progress. By September 1 operations will begin. The company will at first make the wooden boxes in which to pack its product for shipment, and later expects to make boxes for the open market. Henry P. Nivison is president and general manager; offices at the plant, Fort avenue and Lawrence street.

Subbids Wanted.

Mention of contractors wanting subbids on construction work and material will be found, when published, in the "Machinery Wanted" column on another page under the heading of "Building Equipment and Supplies."

ALABAMA.

Birmingham—Quarrying.—S. H. Smith Quarrying Co. has been incorporated by W. W. Praytor, J. B. Martin, N. E. Hitt and S. H. Smith with \$8000 capital.

Brighton—Electric-light Plant.—City contemplates establishing electric-light plant. L. N. Buell is mayor.

Huntsville—Cotton-ropes Mill.—The Chamber of Commerce has announced that a cotton-ropes and twine mill will be established.

Mercury—Cold-storage Plant.—Chase Bros. have let contract to E. L. Patterson of Florence, Ala., for the erection of cold-storage warehouse.

Montgomery—Bridge Construction.—Montgomery Road & Bridge Co. and the Montgomery Bridge Co., both of which have been previously reported as incorporated to construct a steel bridge over the Alabama river into Montgomery, have consolidated as the Montgomery Bridge Co. with H. E. Williams of Chicago, Ill., as president; capital \$150,000. Arrangements will be made at once for the building of proposed bridge, which will be 770 feet long, roadway 20 feet; W. M. Hewitt, Chattanooga, Tenn., engineer in charge.

NEW YORK GLASS CO.

Incorporated 1888.

Prismatic, Leaded, Ornamental, Window, Picture Glass, Sidewalk Lights, Marqueses and Skylight Glass.

393 Canal Street, New York. Baltimore Office: 642 W. Franklin Street.

Baltimore, Md., July 30, 1904.

Manufacturers' Record Publishing Co., Baltimore:

Gentlemen—We find the reports of building operations as published in the MANUFACTURERS' RECORD of great value to us, both as to reliability and completeness.

NEW YORK GLASS CO.,

EDWARD M. STEPHENS, Local Representative.

Montgomery—Water-works Improvement.—City has engaged B. B. Smith to prepare plans and specifications for extension to water-works, for which \$200,000 of bonds was previously reported voted.

ARKANSAS.

Hope—Hardware Company.—Hope Hardware Co. has been incorporated with \$50,000 capital by R. M. Briant, R. M. LaGrove, A. L. Black and others.

Little Rock—Mercantile.—Benson Dry Goods Co. has been incorporated with \$10,000 capital. M. H. Benson is president; T. Spitzberg, vice-president; Leon Spitzberg, secretary, and Morris Phillips, treasurer.

Little Rock—Swings, Ladders, Settees, etc. It is rumored that the Goshen (Ind.) Manufacturing Company, Allen P. Boyer, president, is investigating with a view of establishing factory to make swings, ladders, settees, etc.

Paragould—Real Estate.—Paragould Abstract & Real Estate Co. has increased capital from \$1500 to \$6000.

Paragould—Lumber Company.—George W. Ritchie, Gus H. Jones, C. M. Dickinson and J. F. Rutherford have incorporated the Paragould Lumber Co., with \$2000 capital.

Pine Bluff—Canning Factory.—A stock company is being organized to erect canning factory by the Arkansas Fruit and Vegetable Growers and Shippers' Association.

Smithville—Zinc and Lead Mining.—Southwestern Mining & Milling Co., reported incorporated last week, will erect 100-ton ten-hour concentrating plant. W. G. Harris, Fredonia, Ky., is engineer in charge.

Stamps—Lumber Company.—Wm. Buchanan, Wm. C. Brown, James A. Buchanan and Henry Moore have incorporated the Trout Creek Lumber Co. with \$40,000 capital.

FLORIDA.

Bainbridge—Electric-light Plant.—City has

voted the \$20,000 bond issue previously reported, and will purchase the electric-light plant of Nussbaum Bros.

Fogartyville—Jelly Factory.—Reports state that William Hanson will establish a jelly factory, guava jelly and guava paste being a specialty.

Savannah—Shoe Factory.—M. Wilensky will install additional machinery for doubling the capacity of shoe factory.

Savannah—Coffin and Casket Factory.—Chatham Casket & Coffin Co., previously reported incorporated with \$10,000 capital, has purchased site on which to erect factory building.

GEORGIA.

Athens—Cotton-netting Mill.—Dozier & Co. have decided to establish the mosquito-netting mill previously reported as contemplated. They have secured a suitable building and will operate their machinery by electricity. It is stated the looms have not yet been purchased.

Atlanta—Cotton Mill.—Gate City Cotton Mills' 50x100-foot addition, recently reported as being erected, is to complete the company's carding and picking room and permit of supplying the 10,000 spindles without operating at night. Company has dyehouse not heretofore operated.

Atlanta—Cotton Mill.—Exposition Cotton Mills, referred to last week, has begun improvements to its plant. The company is remodeling Mill No. 1, one story, being changed to a two-story structure and providing increased floor space of about 199x275 feet; also erecting addition to picker-room and machine shop. Completion of the improvements will provide space for 3000 spindles and looms, etc. All contracts have been awarded.

Camilla—Water-works and Electric-light Plant.—City contemplates issuing \$20,000 of

that a Western packing company will establish a 10,000-acre stock farm about 50 miles from Savannah and later build packing-house in the city, representing an investment of about \$100,000.

Savannah—Excelsior Factory.—Lewis Cohen of Sandersville, Ga.; F. Burton Smith of Macon, Ga., and J. E. Linder of Wrightsville, Ga., will organize the Southern Manufacturing Co. to manufacture excelsior; plant will be erected at once, and will have a daily capacity of 10 tons. H. L. Blanchard of New Orleans, La., will be superintendent. Mr. Cohen and associates were reported last month as promoting this enterprise.

Tallulah Falls—Silk Mill.—It is stated by dispatches that Louis B. Magid has arranged for the equipment of machinery for a silk mill, and that water-power will be developed to transmit power by electricity for operating the mill.

Tennille—Cotton Mill.—Tennille Cotton Mills has been purchased by T. N. & J. W. Smith, who will expend about \$15,000 to overhaul and improve the plant preparatory to putting it in operation. Mill's equipment is about 4000 spindles, for manufacturing yarns.

Waycross—Turpentine Plant.—It is rumored that W. A. Martin of Hoboken, Ga., is arranging for the erection of \$6000 plant to manufacture turpentine from stumps.

Wilcox County—Lumber Mill, Farming Lands, etc.—J. C. Delaperriere, W. B. McCants of Winder, Ga.; R. J. Fleeman of Jefferson, Ga., reported last week as having purchased land in Wilcox county and would erect saw-mill, divide into farming lands, etc., have organized the Delaperriere Land & Investment Co.*

Washington—Water-works Improvements.—City will vote September 15 on the issuance of \$20,000 of bonds to enlarge and extend water-works. Address The Mayor.

KENTUCKY.

Carlisle—Water-works.—City contemplates constructing system of water-works. W. J. Kennedy is mayor.

Carrollton—Farming Company.—Pen Mitchell, Anna M. Searcy and L. B. Mitchell have incorporated the Mitchell Farming Co. with \$10,000 capital.

Danville—Concrete-steel Dam.—City has awarded contract to the Amberson Hydraulic Construction Co., 176 Federal street, Boston, Mass., for the construction of concrete-steel dam.

Lebanon—Flour and Meal Mill.—J. M. Estes of Lebanon, W. R. Myers and W. G. Robertson of Columbia, Ky., reported last week as having purchased the R. B. Lancaster Mill, will operate as the Myers-Estes Milling Co. Plant will have a daily capacity of 150 barrels of flour and 1500 bushels of grits, meal, etc.

Louisville—Plumbers' Supplies Factory.—Ahrens & Ott Manufacturing Co. will expend \$50,000 in enlarging and improving its plant. Capacity will be doubled.

Louisville—Barbering Company.—Incorporated: Kentucky Barbering Co., with \$5000 capital, by W. A. Crader, Henry Nufer and Chester Roberts.

Maysville—Paint and Varnish Company.—National Paint & Varnish Co. has incorporated with Charles F. Ball, president; Allan D. Cole, vice-president and treasurer, and Harry L. Walsh, secretary.

LOUISIANA.

Franklin—Steam Laundry.—Pearl Steam Laundry, H. W. Rose, proprietor, will rebuild plant reported burned last week at a loss of \$2500.*

New Iberia—Electric Lights.—City has let contract to Gates & Co. of New Orleans, La., for installing entire new system of arc lights.

New Orleans—Shipbuilding Plant.—Arrangements have been perfected for establishing the shipbuilding and repairing plant lately mentioned as proposed by George A. Hero and associates. A. C. Wuerpel, A. G. Ricks, Pearl Wight and Maurice Stern will be interested in the enterprise. A \$350,000 company will be incorporated to operate the plant. Plans and specifications are now being prepared and construction work will begin soon. The wooden dry-dock will be 332 feet long, 95 feet between sides, etc., costing about \$140,000, with \$20,000 additional to be expended for approaches and other auxiliary facilities. Modern shops will be built. Address George A. Hero, care of Lehman, Stern & Co.

New Orleans—Construction Company.—Chartered: American Construction Co., with \$25,000 capital. Maurice J. Hart is president; Samuel J. Hart, vice-president, and Miss D. Weiss, secretary.

New Orleans—Sanitary Milk Depot.—New

Orleans Pure Milk Co. will be organized with \$100,000 capital by A. G. Ricks, A. C. Wuertel, Charles Weiss, George A. Villere, Dr. T. R. Rudolph and Walter G. Weiss to establish plant at Hammond for clarifying, refrigerating and bottling milk. Plant will have a daily capacity of 2500 gallons.

Plaquemine—Electric-light Plant.—Town has granted franchise to the Ewing-Merkle Electric Co., St. Louis, Mo., for the erection of electric-light plant.

MARYLAND.

Allegany Grove (P. O. Cumberland)—Development Company.—Allegany County Improvement Co., and not the National Highway Improvement Co., as reported last week, will develop as townsite 200 acres of land along the National Pike near Cumberland. Streets are being graded, water-works and sewerage system installed; about \$30,000 will be invested. James C. Shriver is engineer in charge.*

Cumberland—Dye Works.—Thomas Footer & Son have purchased site on which to erect four-story steel, brick and stone building, which will be equipped as dyeing and dry-cleaning plant. Later it is proposed to incorporate the Footer Dye Works Co., with Thomas, Harry, Joseph and Edmund Footer and Cephas H. Gloss as incorporators.

Ellicott City—Feldspar Mines.—Maryland Flint & Spar Co. has been incorporated by Clarence Bennett, Levi A. Thompson, George R. M. Fosnot, A. Crawford Smith and John D. W. Snowden to quarry feldspar along the Patapsco river.

North Point—Suburban Land Improvements.—The North Point Improvement Co. is being organized for the purpose of buying and improving 500 acres of land, dividing the tract into 1000 building sites, offering 70 acres to the city of Baltimore for a bay-side park, dredging a channel for small steamers, etc. The company is being formed by George R. Willis, 213 Courtland street; Francis T. Homer, 213 Courtland street; C. W. Kennard, 192 E. Lexington street, each of Baltimore, Md., and Franklin Roberts of North Point.

Owings Mills—Power-house.—Gladfelter & Chambers, 2674 West Woodberry avenue, Baltimore, Md., have contract to build power-house for the Maryland Asylum and Training School for the Feeble-Minded after plans by Ellicott & Emmart, 323 North Charles street, Baltimore, Md.

Smoketown—Power-house.—Hagerstown Street Railway Co., Hagerstown, Md., is erecting brick power-house.

Sparrow's Point—Pattern Shop.—Maryland Steel Co. will replace pattern shop reported burned last week at a loss of \$40,000, with building 35x60x20 feet, of mill construction, equipped with steam heat, electric lights, etc.

Washington, D. C.—Electric Plant.—Potomac Electric Power Co. has been reorganized with \$5,000,000 capital by George Truesdell, S. L. Shober, Jr., George H. Harris, James B. Lackey and associates. Company manufactures electricity, electrical appliances, etc.

Washington, D. C.—Flour and Feed Mill.—A. B. Mullett & Co., 1411 F street, have completed plans for a four-story mill building for McDowell & Sons.

MISSISSIPPI.

Greenville—Gas and Coke Plant.—J. F. Barnes & Co. have contract to erect Greenville Gas & Coke Co.'s proposed plant; to be of brick, with slate roof and steel frame, and cost \$10,000; E. A. Potter, architect.

Jackson—Grocery, Hardware, etc.—T. B. Gaddis and associates have incorporated the Capital Grocery Co. with \$50,000 capital.

Macon—Water-works.—Bids for the construction of proposed water-works, for which \$20,000 in bonds was voted, have been rejected and city will again advertise. Address The Mayor.

Nettleton—Brick and Lumber Plant.—Nettleton Manufacturing Co. has been organized with \$5000 capital by J. D. Bryan, J. M. Buchanan, N. W. Roberts and associates to manufacture brick and lumber and deal in building material.

Soria City (P. O. Gulfport)—Water-works. Soria City Water-Works Co. has been incorporated, with \$10,000 capital, by J. L. Hall, W. B. Powers and others for the operation of an established water-works plant, supplying artesian water.

Vicksburg—Cottonseed-oil Mill.—W. S. Jones, Marye Gabney, H. C. McCabe, J. M. Manire and George Clifton have incorporated the Vicksburg Cotton Oil Co. with \$75,000 capital, to operate cottonseed-oil mill.

Vicksburg—Cottonseed-oil Refinery.—Vicksburg Refining Co. has been incorporated by W. S. Jones, George Hackett, Daniel Grant, Peter G. Grant and S. M. Neely, with \$50,000 capital, to operate a cottonseed-oil refinery.

Vicksburg.—Incorporated: Robert Ernst Co., with an authorized capital of \$30,000, by Robert Ernst, Gustav F. Bauch and others.

Vicksburg—Furniture Company.—L. D. Tucker, M. M. Tucker and others have incorporated the Tucker & Menger Furniture Co. with \$3000 capital.

Wiggins.—Incorporated: C. A. Harrington & Co., with \$30,000 capital, by C. A. Harrington and others.

Yazoo City—Public Improvements.—City contemplates issuing \$100,000 of bonds for public improvements. Address The Mayor.

Yazoo City—Mercantile.—Incorporated: Armstrong Company, with \$30,000 capital, by W. A. Armstrong and associates.

MISSOURI.

Higbee—Coal-mining.—New York and St. Louis (Mo.) capitalists have purchased 20,000 acres of coal lands in Randolph county at \$600,000, and will incorporate as the Randolph County Coal & Mining Co. for its development. Shafts will be sunk at once, and electricity will be used for operating.

Kansas City—Car-seat Company.—Combination Car Seat Co. has been incorporated, with \$100,000 capital, by H. C. Orr, S. R. Willey and C. C. Courtney.

Kansas City—Brick and Brick-machinery Works.—Kansas City Twentieth Century Brick Co. will be organized with E. D. Steger of Bonham, Texas, president; U. S. Epperson, vice-president and general manager. Company will establish plant for the manufacture of sand-lime brick by a new process invented by Mr. Steger, and the plant will have a daily capacity of 100,000 brick. Machinery for making the brick will also be manufactured; capital \$725,000. A. E. Stillwell, president of the Kansas City, Mexico & Orient Railway, Kansas City, is also interested.

St. Louis—Electrical Heaters.—Frederick F. Shipp of St. Louis, C. H. Blanchard and James A. Howze of Webster Groves, Mo., have incorporated the Electrical Heating & Manufacturing Co. to manufacture and deal in electrical heaters, etc.; capital \$50,000.

St. Louis—Plumbing.—Fitzgerald Plumbing Co. has been incorporated, with \$2500 capital, by William F. Fitzgerald, Richard E. Herweck and Catharine Fitzgerald.

St. Louis—Monument Company.—Norman Monument Co. has been incorporated, with \$6000 capital, by George H. Norman and Henry Kortjohn, Jr., to manufacture and deal in cemetery monumental work.

St. Louis—Construction Company.—Frederick W. Scofield, Joseph Dickson, Jr., Elenelous street, have incorporated the Pan-American Construction Co. with \$1,000,000 capital.

NORTH CAROLINA.

Charlotte—Cotton Gin.—Charlotte Improved Cotton Gin Co. has been incorporated with an authorized capital of \$10,000 by J. E. Wearn, W. H. Zimmerman and S. L. Smith. Building 80x60 feet is being erected after iron-clad plan which will be equipped with eight 70-saw gins.

Dunn—Mercantile.—H. E. Newberry and associates have incorporated the Dunn Mercantile Co. with an authorized capital of \$25,000.

Gastonia—Cotton Mill.—The Lora Mills has awarded contract for the 32,000 spindles, 800 looms and 20 cards required to fill its building with machinery, in accordance with the recent decision of the stockholders. The machinery has begun to arrive at the plant.

Greensboro—Cotton Mill.—The Etowah Mills has awarded contract to the J. F. Gallivan Building & Construction Co. of Greenville, S. C., and Palmer, Mass., for the erection of its various mill buildings in accordance with the plans, etc., as reported at some length in this column last month. The buildings will cost about \$100,000, and are to be completed by February 1. Additional buildings for warehouses, cottages, etc., to cost probably \$100,000, will be contracted for later. As previously stated, this mill is to have an equipment of 7500 mule spindles and 300 looms at the start; also dye-house and finishing plant, to manufacture denims, etc. W. I. Young is president of the Etowah Mills.

Greensboro—Telephone Exchange.—Southern Bell Telephone & Telegraph Co. states they do not contemplate erecting the three-story exchange reported last week.

Holly Springs—Educational.—Incorporated: Holly Springs High School, with \$10,000 capital, by R. H. Templeton, J. R. Carter, B. S. Utley, G. B. Alford and others.

Kings Mountain—Hardware Company.—C. S. Flam, R. F. Flam and J. P. Parker have incorporated the Kings Mountain Hardware Co. (established) with an authorized capital of \$10,000.

Manteo—Fisheries, Fertilizer Factory, etc. Incorporated: Ketcham Fish & Fertilizer Co., with an authorized capital of \$100,000, to operate fisheries, manufacture fertilizers, cultivate oysters, etc., by Isaac Ketcham, C. N. Ketcham and Sarah Ketcham. This company was reported last week as to install equipment for increasing capacity of fertilizer works.

Wilmington—Trading Company.—Incorporated: Cape Fear Trading Co., with \$15,000 capital, by W. R. Newberry, J. B. Taylor and Jesse Hackett.

SOUTH CAROLINA.

Allendale—Mercantile.—W. A. Aull and associates have incorporated the Aull & Wilson Company with \$10,000 capital.

Charleston—Improvement Company.—Uptown Improvement Co. has been incorporated with \$8000 capital by August H. Gosse, John P. B. O'Neill, Eli Rodenburg and Sanot Sotile.

Charleston—Real Estate.—Southern Land & Timber Co. has been incorporated, with \$5000 capital.

Dillon—Real Estate.—Mutual Investment Co. has been incorporated, with \$20,000 capital. D. D. Little is president, and J. W. Allen, treasurer.

Elliot—Lumber Company.—Elliott Lumber Co. has been incorporated by E. D. Law and J. S. McIntosh with \$3000 capital.

Greenville—Mercantile.—Palmetto Dry Goods Co. has been incorporated, with \$10,000 capital, by G. H. Mahon and associates.

Hartsville—Coffin, Table and Mantel Factory.—It is reported that a \$12,000 company will be organized for the establishment of plant to manufacture coffins, tables and mantels. A. M. McNair, Clyde, S. C., can give information.

Hartsville—Hardware.—Chartered: Hartsville Supply Co., with \$10,000 capital. M. Bonoit is president, and A. W. Welling, secretary-treasurer.

Marion—Cotton Mill.—Chartered: The Marion Cotton Mills, with capital stock of \$100,000, for the purpose of establishing a cotton factory. The company may possibly purchase and enlarge the Ashby Cotton Mills, a 3000-spindle plant. William Stackhouse of Dillon, S. C., will be president and treasurer.

Pacolet—Cotton Gin.—Jonesville Oil Mill Co. is erecting cotton gin.

Pacolet—Cotton Mills.—The Pacolet Manufacturing Co.'s No. 3 mill, destroyed by flood last year, is again in condition for operation and will at once begin manufacturing. The company has had site cleared for the erection of No. 5 mill, but will probably not begin construction work until next year. Lockwood, Greene & Co. of Boston, Mass., are the mill architects and engineers in charge.

Spartanburg—Cotton Mill.—The Drayton Mills will double its fine cotton goods mill. Messrs. Lockwood, Greene & Co. of Boston, Mass., having been engaged as the mill architects and engineers in charge. Present equipment of Drayton Mills is 12,440 spindles and 260 looms; capitalized at \$250,000.

Spartanburg—Builders' Supplies.—Morgan Iron Works has purchased and will operate the plant of the Piedmont Builders' Supply Co.

TENNESSEE.

Camden—Railroad Shops.—Reports state that the Louisville & Nashville Railroad, George E. Evans, general manager, Louisville, Ky., will build shops.

Centerville—Phosphate Lands.—National Acid Co. of New Orleans, La., has purchased from J. H. Brown of Swan Creek phosphate lands at the mouth of Swan creek for \$13,000.

Chattanooga—Coal-mining.—Chartered: Diamond Coal Co., with \$10,000 capital, by C. E. Garmany, M. K. Garmany, I. A. Roberts, John T. Eubanks and J. B. Milligan, for the development of 400 acres of coal lands in the Cumberland plateau near Almy, Tenn.

Chattanooga—Car Barn, etc.—Chattanooga Electric Railway Co. will erect car barn and equip with steam hammer, woodworking machinery, machine shop and blacksmith shop.

Clinton—Iron Works.—Clinton Iron Works has been incorporated with \$5000 capital by S. M. Leath, R. J. Evans, C. H. Johnson, D. A. Wood and others.

Dickson—Iron Furnace.—Tennessee Land & Iron Co. has been organized with S. E. Hunt, vice-president; S. M. Grundy, secretary, and W. H. McMurray, treasurer. Company has secured 3000 acres of ore lands and will build furnace with a daily capacity of 100 tons; capital \$50,000.

Hixson—Spoke Factory.—Reports state that H. W. Bragg and associates of Chattanooga, Tenn., will establish branch spoke factory.

Knoxville—Drugs.—Chartered: New Roc's

Medicine Co., with \$10,000 capital, by J. C. Cullen, E. H. Cullen, R. M. Doll and associates.

Loudon—Lead Mine.—M. W. Carpenter contemplates organizing stock company to develop lead mine three miles from Loudon.

Manchester—Spoke, Stave and Heading Factory.—Chesterton Cooperage & Lumber Co. of Chesterton, Ind., has purchased 2500 acres of timber land near Manchester, and will erect plant for the manufacture of spokes, staves and heading.

Maryville—Furniture Factory.—Louis Planze and associates are erecting building which will be equipped as furniture factory, and will operate as the Cherokee Manufacturing Co.

Memphis—Real Estate.—Ridge View Land Co. has been incorporated with \$5000 capital by W. K. Burton, W. W. Farris, J. H. Rawlings and others.

Memphis—Real Estate.—Matthews Land Co., recently reported incorporated with \$60,000 capital, has completed organization with J. M. Goodbar, president; R. H. Vance, vice-president; R. L. Matthews, secretary, and G. W. Macrae, treasurer. Company has purchased 22 acres of land near Memphis, which will be improved as resident section.

Memphis—Liquors.—Jacob Hubbard Company has been incorporated with \$25,000 capital by Jacob Hubbard, H. S. Hubbard and J. W. Durham.

Memphis—Vehicle Works.—Houston-Jarnagin Company has incorporated, with \$5000 capital, to manufacture vehicles of all kinds; incorporators, Charles H. Houston, J. H. Jarnagin, P. Panagiotopoulos, W. T. McGehee and M. S. McGehee.

Nashville—Straw-paper Plant.—It is reported that a stock company will be organized for the establishment of plant to manufacture straw paper and strawboard, and that James Palmer, chairman manufacturers' committee of the Retail Merchants' Association, Nashville, and John A. Ertle of Luke, Ind., are interested.

Nashville—Furniture, Store and Office Fittings.—Edgely & Nashville Manufacturing Co. will build addition to its factory in East Nashville at a cost of \$3000; capacity of plant will be increased.

Nashville—Stave Factory.—A. L. Hayes Company will rebuild stave factory reported burned last month at a loss of \$20,000.

New Providence—Heating, Light and Power Plant.—Board of Trustees of the Odd Fellows' Home will install a steam heating, light and power plant at a cost of \$5000.

Pulaski—Drugs.—Jonas Y. Waldrun, Jarrett L. Griffin, E. J. McKinney and others have incorporated the Waldrun Drug Co. with \$10,000 capital.

Sharon—Cotton Gin.—Holliis & Parish, Brock & Roberts, I. F. Terry, E. E. Baxter and associates have organized company to erect cotton gin.

Troy—Hardware and Specialty Company.—Paul Ingram, J. S. Jones, I. S. Kirby and associates have incorporated the Tennessee Hardware & Specialty Co. with \$10,000 capital.

Willard—Tobacco Factory.—Willard Tobacco Co. is building two-story addition 60x76 feet, and will install machinery for the manufacture of plug tobacco.

TEXAS.

Alba—Cotton Gin and Grist Mill.—D. P. Simpkins, H. C. Baird and A. J. Planco have incorporated the Farmers' Mill & Gin Co., with \$5000 capital.

Austin—Street Paving.—City contemplates paving a portion of Congress avenue; Geo. L. Hume, secretary paving committee.*

Barstow—Cotton Gin and Grist Mill.—Incorporated: Barstow Gin Co., with \$5000 capital, by George E. Briggs, Edward Miller and James Miller to operate gins and mills.

Beaumont—Oil Wells.—George W. Carroll, I. R. Boudages, C. L. Wallace, J. E. Broussard and James A. Anderson have incorporated the Marle Oil Co., with \$10,000 capital, to prospect for oil and other minerals.

Belton—Cotton Mill.—It is reported that the Belton Cotton Mills will double its plant of 3121 spindles and 100 looms.

Bowie—Educational.—John T. Roberts, M. C. Roberts, L. S. Abernathy and U. B. Newman have incorporated the Roberts Business College with \$20,000 capital.

Cleburne—Street Improvements, Fire Station, etc.—City will vote August 31 on the issuance of \$25,000 of bonds for street improvements and fire station. Address The Mayor.

Dentur—Mercantile.—C. C. Jones and associates have incorporated the Jones Dry Goods Co. with \$25,000 capital.

El Paso—Cracker Factory.—It is reported

that H. B. Stubbs of St. Louis, Mo., is investigating with a view to establishing cracker factory; about \$18,000 will be invested.

Fort Worth—Bottling Works.—Joseph M. Kuhen, Daniel H. Uglow and Frank Fogg have incorporated the Kuhen & Uglow Bottling Co. with \$10,000 capital.

Galveston—Shipbuilding Plant.—Charles Clarke & Co. have received the required municipal permit for the establishment of their proposed shipbuilding and repairing plant recently mentioned. They will expend about \$25,000 for filling, bulkheading and construction of wharves, docks, etc. A site about 500x800 feet in size will be utilized for the location of the marine ways, machine shops, woodworking shops, etc.

Galveston—Pumping Station.—Bowden & Worth have contract at \$12,500 for building proposed pumping station at water-works.

Greenville—Mercantile.—E. B. Perkins and others have incorporated the Greenville Dry Goods Co. with \$25,000 capital.

Hallettsville—Tobacco Cultivation and Manufacturing.—Chartered: Lavaca County Tobacco Co., with \$20,000 capital, to plant tobacco and manufacture it into cigars. French Simpson is president; E. H. Mitchell, vice-president; William Blakeslee, secretary, and C. J. Hudgins, general manager.

Jacksonville—Water-works.—City contemplates constructing system of water-works. Address The Mayor.

Junction—Telephone System.—Junction City Telephone Co. has been incorporated by T. B. Phillips, M. E. Blackburn and T. J. Barley.

Marshall—Cold-storage Warehouse.—Marshall Wholesale Grocery Co., reported last week as building cold-storage warehouse and equipping with refrigerating machinery, is erecting building 50x75 feet and installing a six-ton refrigerating plant to be operated by 12-horse-power gasoline engine; cost \$10,000. Machinery has been ordered.

Pittsburg—Water-works.—City will vote September 12 on the issuance of \$7500 of bonds for construction of the water-works lately reported. Address The Mayor.

Sherman—Elevator, etc.—Brackett-Wallace Mill & Grain Co. will rebuild the several buildings, including elevator, reported burned at a loss of \$25,000.

Weatherford—Bridge Construction.—Parker county will vote in November on the issuance of \$25,000 of bonds for the construction of two bridges across the Brazos river. Address County Clerk.

West—Cotton Mill.—Chartered: The Brazos Valley Cotton Mills, capitalized at \$100,000, by T. M. West, J. H. Jones, E. G. Blume, George N. Denton and others. The company acquires and will operate the West Cotton Mills, a plant of 4100 spindles and 200 looms. T. M. West recently bought the mill for \$80,000.

Wharton—Warehouse.—Bolton Warehouse Co. has been incorporated with \$10,000 capital to maintain public warehouse by H. J. Bolton, S. D. Purviance, G. W. Denton and others.

VIRGINIA.

Bristol (P. O. Bristol, Tenn.)—Brick Plant. Adams Bros. Co. have purchased a tract of building-brick clay and will establish brick plant with a yearly capacity of 7,000,000 bricks.

Childress—Flour Mill.—W. B. Farmer will erect three-stand flour mill.

Danville—Water-works.—City has engaged Lockwood, Greene & Co., Boston, Mass., to prepare plans for filtering plant and pumping station to be placed on the Dan river at a cost of about \$100,000. Bids for construction will shortly be asked.

Dillwyn—Excelsior Factory.—J. H. Camden will establish excelsior factory and will make contract for output.

Hampton—Lumber Company.—Clarke Lumber Co. has been organized with \$20,000 capital and consolidated the lumber plants of J. T. Howard & Co. of Hampton and Clarke Bros. of Tampico, Va. C. C. Clarke is president and treasurer; N. C. Clarke, vice-president, and John T. Howard, secretary.

Imboden—Coal Mines and Coke Ovens.—Imboden Coal Co. and the Imboden Coke Co., operating coal mines and coke ovens on Pigeon creek, have consolidated and incorporated as the Imboden Coal & Coke Co., with C. P. Perin, 71 Broadway, New York, president; Julian Kennedy, Pittsburg, Pa., vice-president; Willoughby L. Webb, 63 Wall street, New York, secretary, and V. S. Paine, Imboden, treasurer and general manager.

Lynchburg—Real Estate.—Incorporated: C. I. Johnson & Bowerman Real Estate Co., with C. I. Johnson, president; capital \$75,000 to \$150,000.

Norfolk—Mercantile.—L. J. Upton & Co. have incorporated, with an authorized capital of \$50,000. L. J. Upton is president; T. R. Upton, secretary-treasurer.

Petersburg—Brewery Depot.—Robert Porter Brewing Co. will erect brewery depot of brownstone and pressed brick. Building and machinery will cost \$50,000.

Richmond—Supply Company.—Barton Grundy, George Alsie and Thos. J. Leahey have incorporated the Commonwealth Supply Co. with \$15,000 capital.

Richmond—Incorporated: J. R. Riddick Company has been incorporated with an authorized capital of \$50,000. J. R. Riddick is president.

Shawsville—Nickel Mine.—Reports state that James Norton of Medford, Mass., has discovered a nickel mine near Shawsville and will install machinery for developing it.

Standardsville—Cornmeal Mill.—Charles Miles has purchased the Z. K. Page mill site and will erect mill building.

Winchester—Woolen Mill.—The Virginia Woolen Co., reported in June as to rebuild its burned mill, is progressing with the reconstruction work. It will install 24 looms, four sets of cards, steam power, equipment for dyeing raw stock, etc.

Wise County—Coal-mining.—It is rumored that C. Pardee of Pennsylvania has purchased from the Interstate Investment Co., R. C. Ballard Thruston, Louisville, Ky., superintendent, 3000 acres of coal land on Roaring Fork.

WEST VIRGINIA.

Beechwood—Coal Company.—Big Fall Coal Mining Co., which is erecting plant, has increased capital from \$25,000 to \$50,000.

Charleston—Oil and Gas Wells.—First National Oil & Gas Co. has incorporated with \$50,000 capital to drill for oil and gas; incorporators: Peter Silman, A. J. Humphreys, G. W. Fulmer and associates.

Morgantown—Coke Ovens.—H. C. Frick Coke Co., Pittsburg, Pa., has let contract for the erection of 800 coke ovens on York Run, near Morgantown.

Morgantown—Coke Ovens.—It is reported that the H. C. Frick Coke Co., Pittsburg, Pa., has let contract for the erection of 800 coke ovens on York run, near Morgantown.

Weston—Lumber Company.—West Fork Lumber Co. has been incorporated with \$25,000 capital by F. I. Hudkins, F. C. Orr, J. W. Farnsworth and associates.

Wheeling—Water Main.—City has let contract to Robert W. Kyle Company and Contractor Halleck for laying a 30-inch water-main from the Slacktown pumping station to the reservoir, in 100 days, at a cost of \$75,000.

Wheeling—Grain Company.—Home Grain Co. of Wheeling and Minneapolis, Minn., has been incorporated, with \$15,000 capital, by Gustav E. Ewe, Herbert N. Chadburn, Walter J. Hartzell of Minneapolis, Minn., and associates.

Wheeling—Refrigerating Plant.—McNabb Bros. are erecting two-story building, which will be equipped as refrigerating plant.

Wheeling—Candy Factory.—John W. Herbert Candy Co. has been incorporated, with \$50,000 capital, by John W. Herbert, E. L. Stone, Edw. Wincher, Fred Frazier and Daniel Hirsch.

INDIAN TERRITORY.

Atoka—Realty Company.—Atoka Realty Co. has been incorporated, with \$30,000 capital, by J. D. Lankford, J. S. Fulton and G. A. Cobb.

Halleyville—Cotton Gin.—Halleyville Gin & Milling Co. is the name of company reported last week as being organized with \$10,000 capital to erect cotton gin. Building 20x54 feet will be erected. A. L. Nichols architect in charge.

OKLAHOMA TERRITORY.

Alva—Drilling and Prospecting Company.—Alva Drilling & Prospecting Co. has been incorporated with \$100,000 capital by Louis R. Miller, Noel R. Gasha, T. H. Temple and E. A. Haines.

Chadwick—Cotton Gin and Grist Mill.—W. O. McWilliams, W. S. Woodyard, Rufus Bennett, E. W. Jones and associates have incorporated the Farmers' Gin & Milling Co. with \$6000 capital.

Chandler—Development Company.—J. W. Fuller Mining, Milling & Development Co. has been incorporated, with \$50,000 capital, by W. R. Gulick, F. G. Corbin, R. B. Erwin and associates.

Cleo—Cotton Gin.—It is reported that H. W. Hutchinson will erect cotton gin.

Cleveland—Oil Wells.—George W. Sutton, Charles E. Lee, F. C. Allerder, H. C. Burwick

and associates have incorporated the Valley Oil Co., with \$500,000 capital.

Fort Cobb—Cotton Gin.—Incorporated: Farmers' Gin Co., with \$5000 capital, by B. H. Grisson, John A. Campbell, T. Thomas and others.

Foss—Telephone System.—Incorporated: Northeastern Telephone Exchange, with \$5000 capital, by S. H. James, O. H. James and associates.

Hinton—Cotton Gin.—J. J. Ayres contemplates erecting cotton gin.

Noble—Mercantile.—C. M. Hobaugh and others have incorporated the Noble Mercantile Co., with \$10,000 capital.

Oklahoma City—Lumber Company.—Incorporated: Three-State Lumber Co., with \$10,000 capital, by H. D. Currie and C. D. Smith of Oklahoma City and W. O. Cummings of Dallas, Texas.

Oklahoma City—Matthews Company has increased capital from \$5000 to \$10,000.

Watonga—Cotton Gin.—Reports state that J. W. Team will erect cotton gin.

BURNED.

Bowman, S. C.—D. B. Berry's saw-mill and cotton gin; loss \$1000.

Dresden, Tenn.—W. B. Shannon & Co.'s stove mill; loss \$1900.

High Point, N. C.—Southern Chair Co.'s finishing plant.

Lawrenceburg, Tenn.—First National Bank building and M. B. Sims' store building.

Monticello, Fla.—Mays & Partridge's cotton warehouse; loss \$2000.

Petersburg, Va.—S. S. Elliott's storage warehouse.

Pinnacle, N. C.—E. W. Culler & Son's canning factory; loss \$5000.

Richmond, Va.—W. S. Forbes & Co.'s meat-packing plant; loss \$40,000.

Sherman, Texas.—Brackett-Wallace Mill & Grain Co.'s elevator, mill buildings, etc.; loss \$25,000.

BUILDING NOTES.

* Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

Aberdeen, N. C.—Store Building.—Alfred & Ewing have purchased site on which to erect two-story brick store building 32x70 feet.

Andalusia, Ala.—Church.—W. L. Frazier has contract to erect proposed \$20,000 edifice for the Baptist church.

Andalusia, Ala.—Dwelling.—J. O. Acres will erect \$10,000 residence.

Baton Rouge, La.—School Building.—City has rejected bids received and plans submitted by Andrew J. Bryan & Co., New Orleans, La., for the erection of proposed school building, and new plans will be advertised for; W. H. Bynum, mayor.

Beaumont, Texas—Office Building.—John B. Goodhue contemplates erecting office building.

Cape Henry, Va.—Hotel.—A. E. Roe of Princess Anne, Va., is having plans prepared for the erection of hotel.

Charleston, W. Va.—Business Building.—W. M. Hobbs will erect two-story brick and stone business building.

Charleston, W. Va.—Dwellings.—Charleston Land Co. will at once begin the erection of 100 residences for factory employees.

Charlotte, N. C.—Dwellings.—Brown & Co. have let contract to J. N. Mallonee for the erection of two residences.

Charlotte, N. C.—Dwelling.—Dr. R. E. Costner has had plans prepared by Wheeler & Runge for the erection of residence, and contract will be let at once.

Chattanooga, Tenn.—Residence.—W. T. Downing has completed plans for Z. C. Patton's proposed \$25,000 residence of brick and stone near Flintstone, and contract for the stonework has been let to Holmes Bros.

Chattanooga, Tenn.—Sanitarium.—Dr. E. F. Lovejoy has purchased site on which to erect \$35,000 sanitarium, for which plans are being prepared by Huntington & De Sabla.

Chattanooga, Tenn.—Store Building.—Casey & Hedges Manufacturing Co. will erect brick store building to cost \$7000; structure to be two stories, 40x100 feet.

Columbus, Miss.—College building improvements.—Flanagan & Co. of Chicago, Ill., have contract for proposed work on the interior of chapel and industrial hall at the Industrial Institute and College, and F. M. Jacobs of Columbus has contract for plumbing and installing heating apparatus.

Cooper, Texas—Warehouses.—Incorporated: Delta County Farmers' Association, with \$5000 capital, to maintain and construct warehouses, etc., by Tom Chestnut, S. P. Sansing of Cooper and W. S. Miller of Lake Creek, Texas.

Corinth, Miss.—Church.—U. R. Heavenor has contract to erect proposed \$9000 edifice for the Methodist church after plans by H. T. McGee.

Crisfield, Md.—Hospital.—Woman's Christian Temperance Union contemplates establishing hospital.

Cuthbert, Ga.—Jail.—J. L. Jay has contract for brick and stone jail building previously reported to be erected by Randolph county.

Dallas, Texas—Warehouse.—J. I. Case Threshing Machine Co. of Racine, Wis., has secured site on which to erect five-story brick and stone building to cost \$50,000.

Decatur, Ala.—Church.—Presbyterian church has let contract to Samuel Lee for the erection of proposed \$5000 edifice, after plans by Architect Breeding of Birmingham, Ala.

Dublin, Ga.—Residence.—J. D. Smith is having plans prepared by George C. Thompson for the erection of \$10,000 brick dwelling.

Farmington, Mo.—Hospital.—Board of Managers of State Hospital No. 4, Farmington, Mo., will open bids August 30 for the erection and completion of brick hospital building. Plans and specifications are on file at the administration building on the institution grounds, also at office of R. H. Hohenschild, architect, Rolla, Mo. Usual rights reserved.

Fort Myers, Fla.—Depot.—F. C. Blackmer, Jacksonville, Fla., has contract to erect depot for the Atlantic Coast Line Railroad Co. reported last week; structure to be 50x119 feet, of frame with slate roof, electric lights, and cost \$7000.

Fort Screven, Ga.—Buildings.—Plans and specifications are being prepared for the construction of barracks, detached mess hall and lavatory at Fort Screven to cost about \$25,000, and bids will shortly be asked. Capt. Joseph Davidson of quartermaster's department is in charge.

Fort Smith, Ark.—Depot.—It is reported that the Fort Smith & Western Railroad, J. J. Mahoney, general manager, Fort Smith, Ark., will erect \$20,000 freight depot.

Greensboro, N. C.—Business Building.—W. R. Pleasants & Co. have contract to erect C. N. McAdoo's proposed building; structure to be five stories, of brick, and cost \$30,000.

Greensboro, N. C.—Store and Office Building.—J. S. Wynne of Raleigh, N. C., has let contract for the erection of brick, stone and glass store and office building.

Greenville, Miss.—School Building.—W. Yerger, mayor, Greenville, Miss., will open bids September 10 for the erection of school building. Drawings on file at mayor's office, Greenville; also at office of Kenneth McDonald and J. F. Shebley, architects, Louisville, Ky. Certified check for \$500 must accompany each bid. Usual rights reserved.

Gulfport, Miss.—Hotel.—North Gulfport Land & Improvement Co. contemplates erecting hotel in North Gulfport.

Guthrie, O. T.—Hotel.—C. D. Hodges, an Eastern capitalist, has made a proposition to the Commercial Club to construct a 120-room hotel.

Highlandtown, Md.—School Building.—Baltimore County School Board has rejected bids for proposed school building.

Jacksonville, Fla.—Home.—J. C. Halsema has contract to erect proposed \$12,000 brick building for the Home for the Aged.

Jellico, Tenn.—Church.—Christian Church, recently organized, will erect edifice. J. W. Ratcliffe can be addressed.

Knoxville, Tenn.—Hospital.—Tennessee Medical College has had plans prepared for the erection of \$20,000 hospital.

Knoxville, Tenn.—Apartment-house.—Mrs. J. T. McTeer has had plans prepared for the erection of three-story brick apartment-house.

Lakeland, Fla.—Warehouse.—South Florida Supply Co. is building an addition to warehouse.

Lakeland, Fla.—Office Building.—W. D. McCrae has contract for three-story office building previously reported to be erected by Robert Bryant at a cost of \$15,000.

Laurel, Miss.—Hotel.—F. S. Beckner has purchased the Edwards House, which will be enlarged and improved.

Lexington, Ky.—Dwelling.—Mrs. Bryon McClelland will erect \$20,000 residence.

Lexington, Miss.—School Building.—R. C. McFee, mayor, will open bids September 13 for the erection of school building. Plans and specifications can be seen at the mayor's office, Lexington, or at the office of R. H. Hunt, architect, Chattanooga, Tenn. Certified

fixed check for \$500 must accompany each bid. Usual rights reserved.*

Liberty, Texas.—Church.—Methodist congregation contemplates erecting edifice. Address The Pastor.

Louisa, Va.—Courthouse.—W. T. Meade, chairman board of supervisors of Louisa county, will open bids September 3 for the erection of courthouse. Plans and specifications can be seen at office of J. J. Porter, county clerk, or D. Wiley Anderson, architect, Richmond, Va.

Lutcher, La.—Bank Building.—Sealed bids will be received by F. Reynaud until August 20 for the erection of two-story brick bank building. Plans may be seen at the Bank of Baton Rouge, Baton Rouge, La.; office of F. Reynaud, Lutcher, and office of Favrot & Livaudais, architects, Abraham Building, New Orleans, La. Certified check for \$150 must accompany each bid. Directors reserve usual rights.

Memphis, Tenn.—Stable.—Day & Bailey Grocery Co. has let contract to Olson & Lesh for the erection of one-story brick stable, 40x200 feet, after plans by Shaw & Pfeil.

Millington, Tenn.—Bank Building.—Bank of Millington is erecting two-story brick bank building.

Montgomery, Ala.—Theater.—It is reported that J. C. Montgomery contemplates erecting theater to cost \$10,000 and have a seating capacity of 1500.

Morrilstown, Tenn.—Church Improvements. Mike Caldwell is architect in charge of improvements reported last week to be made to the Presbyterian Church, to include the erection of addition 60x80 feet; cost \$10,000.

MT. Pleasant, Ala.—Church.—Baptist congregation contemplates erecting edifice. F. G. Posey is pastor.

Muskogee, I. T.—Opera-house.—George H. Johnson is architect and contractor for opera-house lately mentioned; structure to be 60x144 feet, ordinary construction, steam heat, electric lights, and cost \$40,000.

Nashville, Tenn.—Depot Improvements.—It is reported that the Tennessee Central Railroad, G. A. Clark, general manager, Nashville, will expend \$18,000 in improvements to its passenger station.

New Orleans, La.—Hotel, etc.—Captain McSweeney and Otto Maler will organize stock company to erect hotel at Grand Isle.

New Orleans, La.—Warehouse.—Albert Mackie Grocery Co. will erect five-story warehouse to cost \$100,000.

New Orleans, La.—Hotel Addition.—Toldano & Wogan have completed plans and specifications for proposed 12 story addition to the Grunewald Hotel, Theodore Grunewald, manager, and bids for construction will shortly be asked.

Norfolk, Va.—Street Paving.—Seventh Ward Improvement Board has let contract to Sands & Lawson, Norfolk, and the General Supply Co., Taylor & Bain, local representatives, for paving streets (previously reported) with granite-like paving at \$1.14 per square yard.

Norfolk, Va.—Coliseum.—J. H. Pierce has contract to remodel coliseum of the Norfolk Horse Show and Fair Association, after plans by J. K. Peebles.

Norfolk, Va.—Storehouse.—Sealed proposals will be received at bureau of yards and docks, Navy Department, Washington, D. C., Mordecai T. Endicott, chief of bureau, until September 10 for constructing a brick and steel building about 50x150 feet in plan at the navy-yard, Norfolk. Plans and specifications can be seen at the bureau, or will be furnished by the commandant of the navy yard upon deposit of \$10.

Norfolk, Va.—Office Building.—Cotton Office Corporation has been incorporated with T. A. Jones, president; John H. Rodgers, vice-president; W. M. Simpson, secretary, and Walter Boone, treasurer, for the erection of office building on site recently purchased; capital \$50,000.

Norfolk, Va.—Pier.—Norfolk & Western Railway, Charles S. Churchill, chief engineer, Roanoke, Va., states there is no truth in the report mentioned last week that it would build another pier at Lambert's Point.

Norfolk, Va.—Theater.—It is reported that D. Lowenberg and Northern capitalists contemplate the erection of theater on Tazewell street.

Paducah, Ky.—Market-house.—Board of Public Works has accepted plans by W. L. Brainerd for proposed \$20,000 market-house.

Paris, Tenn.—Church.—First Baptist Church will erect \$12,000 edifice. W. T. Ryals is pastor.

Pence Springs, W. Va.—Hotel.—It is rumored that R. E. Carney of Sissonville, W. Va., has purchased property on which to erect hotel.

Pensacola, Fla.—Building.—Boies de Leon of Atlanta, Ga., will be awarded contract for building the bureau of equipment building at the navy-yard, to cost \$116,000.

Pewee Valley, Ky.—Home Improvements.—Board of Trustees of Confederate Soldiers' Home will let contracts for improvements, to include the installation of lighting plant, construction of concrete pool to be used as reservoir to hold 1,300,000 gallons of water, drainage, etc. Legislature recently made an appropriation of \$54,000 for these improvements.

Pikeville, Ky.—Store Building.—Pikeville Grocery Co., reported incorporated last week with an authorized capital of \$100,000, will erect building 75x210 feet. (This is a branch of the Huff, Andrews & Moyler Co., Roanoke, Va.)

Reisterstown, Md.—School Building.—G. W. Lovell has contract at \$13,527 for the erection of proposed building for the Franklin High School.

Richmond, Va.—Dwelling.—W. A. Chesterman has contract to erect \$15,000 residence for George Elliott.

Richmond, Va.—Dwelling.—R. L. Harrison has had plans prepared by A. F. Hunt for the erection of residence to replace one recently burned.

Richmond, Va.—Store Building.—A. F. Hunt is preparing plans for four-story store building to be erected by the Allison estate; Warner Moore, executor.

Roanoke, Va.—Church.—Central Manufacturing Co. has contract to erect proposed \$7500 edifice for St. Paul A. M. E. Church.

Robeline, La.—Bank Building.—New bank organized by Mr. Woodfin of the Interstate Trust & Banking Co. of New Orleans, La., will erect bank building.

Salisbury, N. C.—Auditorium.—J. R. Loftin of Gastonia, N. C., has contract at \$22,000 for the erection of proposed auditorium.

Somerville, Texas.—School Building.—Tom H. Shannon, president School Board, will open bids August 23 for the erection of brick school building in accordance with plans on file at office of C. H. Page, Austin, Texas, or president's office, Somerville. Certified check for \$300 must accompany each bid. Usual rights reserved.

Spencer, Tenn.—Courthouse.—Ray & Hawthorne have contract reported last week as having been let for Van Buren county's courthouse; structure to be two stories, of brick, 41x51 feet, and cost \$4500. L. Hawthorne prepared the plans.

St. Louis, Mo.—Hospital.—Board of Public Improvements has awarded contract to T. W. Hackett at \$47,540 for the erection of proposed hospital at the city poorhouse.

St. Louis, Mo.—Store Buildings.—Michael Anderson will erect two two-story brick store buildings to cost \$12,000.

St. Louis, Mo.—Dwelling.—C. O. Cunningham has permit to erect two-story brick residence to cost \$5000.

St. Louis, Mo.—Dwelling.—Clara Aupenger will erect \$5000 residence.

Sumter, S. C.—Hospital.—Sumter Hospital Co., reported incorporated last week with \$20,000 capital, will erect hospital, and contemplates building of artificial stone.*

Union, S. C.—Hospital.—Chartered: Hospital Association, with W. M. Culp, president; L. M. Rice, vice-president, and Crown Torrence, secretary, to erect hospital.

Washington, D. C.—College Improvements. Georgetown University, reported last week as to make improvements, has let contract to the Brennan Construction Co. for the erection of building 62x12 feet, of ferro-concrete, to be equipped with hot-water heating plant, electric elevator; cost \$100,000. A. O. Von Herbulis prepared the plans.

Washington, D. C.—Store Building.—Geo. Freeman has had plans prepared by Wm. L. Conly, Wisconsin avenue, for the erection of two-story brick store building to cost \$12,000, and bids for erection are now being invited.

Washington, D. C.—Dwelling and Stable.—A. P. Clark, 605 F street, is receiving bids for the erection of three-story residence, 50x50 feet, of brick and stone, and brick and stone stable, one and one-half stories, 18x31 feet, at Lanier avenue and Adams Mill road.

Washington, D. C.—Store Buildings.—Paul Smith, 229 E street N. E., has contract to erect three store buildings for the B. H. Walter estate.

Washington, D. C.—Dwelling.—John R. McLean is having plans prepared by John Russell Pope, 1135 Broadway, New York, for improvements to residence to cost \$50,000.

Washington, D. C.—Dwelling.—Richardson & Burgess, Colorado Building, have contract to erect proposed \$100,000 fireproof residence of brick and stone for Thomas T. Gaff after

plans by Bruce Price and J. H. De Sibour, 1135 Broadway, New York.

Washington, Ga.—School Buildings.—City contemplates issuing \$10,000 of bonds for school purposes. Address The Mayor.

Williamstown, Ky.—Lodge Building.—Local lodge Knights of Pythias has purchased site at \$2700 on which to erect brick and stone lodge building.

RAILROAD CONSTRUCTION.

Railways.

Alexandria, Va.—Mr. W. D. Duke, general manager Richmond, Fredericksburg & Potomac Railroad Co., writes from Richmond, Va., to the Manufacturers' Record confirming the report that a freightyard is to be constructed near Alexandria, Va. He says that the yard will have a capacity of 2000 cars per day and will be built on the gravity plan.

Asheville, N. C.—F. R. Grant is reported to be working on a plan to build an electric railway from Asheville to Hendersonville, about 20 miles, and the Asheville Board of Trade has appointed a committee to confer with the Hendersonville Board of Trade on the proposition.

Athens, Texas.—Reported that the Athens Loan Agency, representing Chicago capital, proposes to build an electric railway between Gonzales and New Braunfels, Texas.

Birmingham, Ala.—The Birmingham Belt Railroad (Frisco system) is building an extension of five miles to North Birmingham and Thomas. A. J. Lightner is general manager.

Camden, Ark.—The Memphis, Paris & Gulf Railroad has applied for a charter to build a line from Memphis, Tenn., through Arkansas, passing near Little Rock to Paris, Texas, about 400 miles. The incorporators are James W. Brown, William K. Ramsey, Walter W. Brown and T. J. Gaughan of Camden; C. C. Henderson, Robert W. Huie, Eugene W. Barkman and George H. Locke of Arkadelphia; Ben F. Thompson of Ruston, La.; C. E. Neely of St. Louis and T. M. Dodson of Hot Springs. The directors are: J. W. Brown, president; W. W. Brown, vice-president; C. E. Neely, secretary; R. W. Huie, auditor; W. K. Ramsey, treasurer; C. C. Henderson, general manager; T. J. Gaughan, attorney.

Chicago, Ill.—F. S. Mordaunt & Co., 107 Washington street, write the Manufacturers' Record that the St. Joseph, Albany & Des Moines Railroad will have 180 miles of main-line track from St. Joseph, Mo., to Des Moines, Iowa, with a 20-mile extension into coal fields in Iowa and 30 miles of sidings; total, 230 miles; grade, 1 per cent.; rails, 80 pounds. The company is thoroughly financed, the money is ready for construction, and the second corps of engineers are in the field. When all rights of way have been secured it is expected to complete grading as far as possible before cold weather begins. All communications should be addressed to F. S. Mordaunt, president, Chicago, Ill.

Chicago, Ill.—The Chicago, Rock Island & Pacific Railway (Frisco system) will, it is reported, enlarge its freight yards in Memphis, Tenn., the object being to secure tracks in West Memphis to be used for interchange business and for storing freight cars. W. L. Darling is chief engineer.

Corpus Christi, Texas.—It is reported that Johnston Bros. have secured the contract for the construction of the St. Louis, Brownsville & Mexico road from Robstown to Bay City, through Refugio and Placido, 144 miles, and work is to begin as soon as men and teams can be assembled, grading and track-laying to start from Bay City.

Decatur, Ala.—A movement is under way, it is reported, to construct an electric railway from Decatur to Trinity mountain, about seven miles, and an effort will be made to have the line built during the fall or winter. James L. Echols may be able to furnish information.

Elkins, W. Va.—It is reported that engineers are surveying for a line of railroad from West Virginia through Jarretts, in Sussex county, on the Atlantic Coast Line Railroad, to deep water and Norfolk in the interest of the Tidewater Railroad Co. Hon. Henry G. Davis and Senator S. B. Elkins are said to be interested.

Fort Smith, Ark.—Mr. S. A. Williams, president of the Sebastian Electrical Co., writes the Manufacturers' Record that "the Cincinnati Engineering & Investment Co. of Cincinnati, Ohio, has entire charge of and is now preparing the permanent location and survey of our enterprise. Work is being pushed in order to be ready to take up the matter of financing this fall."

Galveston, Texas.—R. W. Luttrell, chief engineer of the Peach River Railroad, has

awarded, it is reported, to W. S. Deley & Co. of Houston the contract for the construction of its line to connect with the Houston, East & West Texas at Midline Station, 26 miles north of Houston.

Galveston, Texas.—Col. L. J. Polk, formerly vice-president of the Gulf, Colorado & Santa Fe Railway, is reported to be working on a plan to extend the Gulf Shore road from Stockdale to Velasco. It is also reported that Eastern capitalists may become interested.

Greenville, S. C.—Right of way has been granted the Greenville & Knoxville Railway, and construction on the road is expected to begin in about 10 days or two weeks, possibly earlier. Oscar Mauldin of Mauldin & Townes is counsel for the road, and Hugh H. Prince, president.

Hagerstown, Md.—John W. Feldman of Hagerstown and others are reported to be working on a plan to build an electric railway from Hagerstown to Waynesboro, Pa., 11 miles. Options on the Hagerstown and Letersburg turnpike are reported secured, and Pittsburg and Cumberland capitalists are said to be interested. Mr. Feldman writes the Manufacturers' Record that the proposed line will be 12 miles long and follow the turnpike the entire distance. It will probably connect with lines reaching Frederick, Md., and at Waynesboro with lines running from Greencastle and Pen-Mar, and with proposed line to Chambersburg, Pa.

Hot Springs, Ark.—The Baroness de Palandt of London, who purchased the Potash Sulphur Springs from E. E. Woodcock, will, it is reported, build an electric railway from Hot Springs to that resort.

Hot Springs, Ark.—The Little Rock & Hot Springs Western Railroad will, it is reported, build a spur to Oak Lawn, which will include the building of a bridge costing about \$9000. G. L. Morris is general superintendent.

Louisville, Ky.—The Cambria Southern Railroad, said to be a Louisville & Nashville line, has filed its charter at Knoxville, Tenn., to build a line from Wetmore, Tenn., to the Georgia State line, and thence to Cartersville, Ga., about 75 miles. R. Montfort is chief engineer.

Knoxville, Tenn.—W. J. Oliver & Co. of Knoxville have, it is reported, been awarded a contract to rebuild the Atlanta, Knoxville & Northern Railway from Knoxville to Wetmore, 60 miles. J. H. Peyton is engineer of construction at Madisonville, Tenn. The contract will, it is reported, cause the expenditure of from \$1,500,000 to \$2,000,000.

Knoxville, Tenn.—The Mentor Southern Railroad has filed a charter for incorporation to build a railroad through Blount, Loudon and Monroe counties. The line will be 20 miles long, costing about \$2,000,000, and be an auxiliary to the Atlanta, Knoxville & Northern Railroad. It is probable the town of Maryville will be reached by it. The incorporators are J. H. Ringgold, W. H. Oliver, W. L. Pomeroy, J. B. Wright and J. H. Frantz.

Marion, Va.—The Virginia & Southern Railroad, it is reported, has completed its line from Sugar Grove, Smyth county, the terminus of the Marion & Rye Valley Railway, to Woodmont, in Grayson county.

Meridian, Miss.—The Meridian Terminal Co., recently organized for constructing terminals, has elected the following officers: President, C. C. Harvey; secretary, W. J. Kelleher; general counsel, E. L. Russell; directors, Charles S. Clarke, W. A. Garrett, C. C. Harvey, D. D. Curran and M. F. Richey.

Nashville, Tenn.—The work of putting in additional tracks at the Front Street Passenger Depot of the Tennessee Railroad has begun. W. N. McDonald is chief engineer.

Nashville, Tenn.—Mr. Hunter McDonald, chief engineer of the Nashville, Chattanooga & St. Louis Railway, writes the Manufacturers' Record that a preliminary survey has been made from the State line to Columbus, but that a decision has not yet been reached as to whether the road will be built.

Nashville, Tenn.—Reported that grading has been completed for an extension of nine miles of the McMinnville branch of the Nashville, Chattanooga & St. Louis Railway from Bon Air. H. McDonald is chief engineer.

Newbern, N. C.—O. H. Gulon is quoted as saying that W. A. Cullen will immediately begin construction on the Pamlico, Oriental & Eastern Railway to be built from Newbern to Bayboro, Oriental and other points. Rails have been ordered.

New York, N. Y.—Application has been made for a charter, it is reported, to organize the Memphis & Pensacola Railroad for the purpose of building a railroad from Memphis, Tenn., to Pensacola, Fla., passing through Mississippi. The organizers are Elmer T. Haines, Wm. C. Roberts and George

A. Scott of New York city and I. Floyd Woodruff of Kinderhook, N. Y. It is proposed to complete the line within two years.

Oakland, Md.—The Preston Lumber & Coal Co. writes the Manufacturers' Record that it is now building a 12-mile extension from Crellin, Md., to the headwaters of the Youghiogheny river. An extension to Parsons, W. Va., on the West Virginia Central, is not impossible, although such an extension is not contemplated. The road is to be extended as timber operations demand. The company will build the line and will order supplies, tools, etc., as needed. No rolling stock is required at present.

Oklahoma City, O. T.—Plans have been submitted by R. L. McWillie, chief engineer, and George A. Teague, secretary of the Oklahoma, Lexington & Sulphur Springs Railway, for their proposed electric line from Oklahoma City to Sulphur Springs, I. T., 85 miles, and work is to begin at once. It is also stated that the company will build the line to Denison, Texas.

Parkersburg, W. Va.—The Electric Railway Construction Co., which is to build the line of the Ohio Valley Electric Railway Co., connecting Parkersburg, Sistersville and Friendly, has organized with \$250,000 capital and the following officers: President, R. J. A. Boreman; vice-president, W. R. Smith; treasurer, E. R. B. Martin; secretary, J. F. Partridge.

Port Arthur, Texas.—George Woodward, D. L. Burch, John A. Young and associates have been granted a franchise for right of way over the old Beaumont, Port Arthur and Sabine Pass public road for an electric line to extend from Port Arthur to the Port Arthur docks, about three miles. A company has been organized with \$100,000 capital, and it is reported that work will begin in four months, the road to be completed within two years. Another report says the name of the corporation is the Port Arthur & Southern Electric Railway Co.

Samson, Ala.—Mr. W. J. Van Kirk writes the Manufacturers' Record that he intends building a logging road 10 miles long through pine land, and is about to purchase rails.

Sour Lake, Texas.—The Beaumont, Sour Lake & Western Railway has secured right of way, it is reported, into Sour Lake west of the Texas & New Orleans Railway, and grading is now in progress.

St. Louis, Mo.—It is reported that the Missouri, Kansas & Texas Railway is preparing to build a branch line from Mokane, Mo., to Booneville, Mo., passing through Fulton and Columbia and connecting with the main line at Booneville, tapping coal fields in Callaway and Boone counties. S. B. Fisher is chief engineer.

Topeka, Kan.—Mr. J. G. Wood, secretary of the American Investment & Development Co., writes the Manufacturers' Record that nothing has been done in the matter of an electric line from Kansas City southeastward and return to Kansas City except to negotiate a charter. Offers have been made to finance the project, and it is expected matters will take a tangible shape in about two weeks. Gen. Nelson A. Miles is president of the company.

Tuscaloosa, Ala.—Mr. Woolsey Fennell, civil engineer, writes the Manufacturers' Record that he has the contract for about one and one-half miles of line at Meridian, Miss., to be constructed by the Mobile & Ohio. The line will be built to the Meridian Fertilizer Co.'s plant, and connect there with the New Orleans & Northeastern Railroad.

Waynesville, N. C.—Mr. B. J. Sloan, proprietor of the Haywood White Sulphur Springs Hotel, writes the Manufacturers' Record that the report is incorrect that he is building an electric line from Waynesville to Eagle's Nest Hotel, and adds that he knows of no such plan.

Street Railways.

Columbia, S. C.—The Columbia Electric Street Railway, Light & Power Co. will, it is reported, build its fair-ground extension from the Granby line instead of from the Epworth line as soon as all rights of way are secured.

Denton, Texas.—A. C. Owsley of Denton is reported to be working on a plan to build a street-car line here.

Greenville, S. C.—The Greenville Traction Co. will, it is reported, begin work immediately on the proposed loop from Pemberton street to the Buncombe street terminus.

Gulfport, Miss.—The North Gulfport Land & Improvement Co. is building an electric railway about two and one-half miles long from the beach to the North Gulfport addition, and expects to complete it soon.

Meridian, Miss.—J. A. Ginson, secretary and treasurer of the Meridian Light & Railway Co., is reported as saying that improve-

ments are to be made on its Meridian lines, consisting of relaying track with heavier rails, etc.; also the building of an additional loop around the Southern Hotel and the courthouse.

Muskogee, I. T.—Mr. Ira L. Reeves, president and general manager of the Muskogee Electric Traction Co., informs the Manufacturers' Record that the proposed six miles of track will be built within the next six or eight months. The other officers are J. A. Connolly, vice-president; A. C. Trumbo, treasurer, and N. A. Gibson, secretary and attorney.

Owensboro, Ky.—The Owensboro City Railroad Co. has filed an amendment to its charter to build an extension 15 miles long into Davless county.

Washington, D. C.—It is reported that work has begun on the extension of the Washington Railway & Electric Co.'s Eleventh Street line. E. Saxton has the contract.

MACHINERY, PROPOSALS AND SUPPLIES WANTED.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The Manufacturers' Record has received during the week the following particulars as to machinery that is wanted.

Addressing Machine.—Southern Saw Works, Atlanta, Ga., wants to purchase an up-to-

over Limestone creek on the Huntsville and Brown's Ferry road. Specifications must accompany bid. Usual rights reserved. For further information address the chairman.

Bridge Construction.—F. A. Scales and R. B. Caldwell, representing Davidson and Williamson counties, Tennessee, will receive plans, specifications and sealed bids until September 1 at 307 North Cherry street, Nashville, Tenn., for building a bridge over Mill creek at Concord Church; main bridge to be 65 feet long with a northern approach 50 feet long, both with wagonway 12 feet wide in the clear, and to be of steel and carrying capacity of 24,000 pounds weight. Plans, specifications and bids for the main bridge, the steel approach, the abutments to main bridge and abutments for truss supports to steel approach shall be made separately. Usual rights reserved.

Bridges.—Board of Supervisors of Yazoo county, Mississippi, will let September 5 at public outcry to the lowest bidder, in front of courthouse door, Yazoo City, Mississippi, contract to build two bridges in accordance with plans and specifications filed. Bond to keep same up and in good repair for five years will be required. Board reserves usual rights.

Building Equipment and Supplies.—G. W. Donaghey, Fayetteville, Ark., wants price on iron, floor tile, steel ceiling, press brick, slate, plumbing, steam heating, sash and doors (hardwood finish), builders' hardware, etc.

Building Equipment and Supplies.—Sumter Hospital Co., Sumter, S. C., wants information regarding the comparative cost between wood and brick and artificial stone in the erection of building; wants full details.

Building Equipment and Supplies.—Henderson & Co., Ltd., builders, 218 West Fayette street, Baltimore, Md., and 1221 Arch street, Philadelphia, Pa., want subbids on the following building materials for office and storehouse building for the United States Marine Corps to be erected at Philadelphia: Brick, stone, ornamental terra-

Crushing Equipment.—See "Roadmaking Machinery."

Distilling Apparatus.—Southern Naval Stores Distilling Co., Valdosta, Ga., wants to correspond with manufacturers relative to the construction of a patented device for distilling spirits from wood.

Distilling Apparatus.—Southern Naval Stores Distilling Co., Valdosta, Ga., wants to correspond with manufacturers relative to the construction of a patented device for distilling spirits from wood.

Drill.—See "Roadmaking Machinery."

Dry-kiln.—See "Lumber Mill."

Drying Equipment.—See "Brick Machinery."

Electric-light Plant.—See "Water-works Equipment."

Electric Motors.—Ettmuller-Schultz Kneading Machine Co., 310-312 Elm street, St. Louis, Mo., wants prices on one-quarter-horse-power electric motors.

Electrical Equipment.—Allegheny County Improvement Co., Cumberland, Md., wants prices on electrical equipment.

Elevator.—Henry B. F. Macfarland, Henry L. West and Chester Harding (acting), Commissioners, Washington, D. C., will open bids September 5 for furnishing and installing one freight elevator and hydraulic operating engine at the sewerage-pumping station, Washington, D. C. Specifications and blank forms of proposals may be obtained on application. Usual rights reserved.

Engine.—Ettmuller-Schultz Kneading Machine Co., 310-312 Elm street, St. Louis, Mo., wants prices on one-quarter-horse-power gas or gasoline engines.

Engines.—Hugh S. Morrison, Richmond, Va., wants information on fuel-oil engines, small units.

Engines.—See "Lumber Mill."

Engine and Boiler.—W. H. Freeman, Sumter, S. C., wants to buy engine and boiler.

Engines and Boilers.—Kentucky Stave Co., 71 Todd Building, Louisville, Ky., is in the market for portable engines and boilers of about 40 horse-power.

Excelsior Machinery.—B. Y. Stafford, Walkerton, N. C., wants addresses of manufacturers of excelsior machinery.

Excelsior Machinery.—J. H. Camden, Dillwyn, Va., is in the market for excelsior machine.

Fiber Machinery.—N. I. Mayes, 700 Cherry street, Chattanooga, Tenn., wants catalogues and prices on fiber machinery to convert palmetto, grass, etc., into fabric.

Filter Stones.—Richmond Foundry & Manufacturing Co., 18th and Cary streets, Richmond, Va., wants addresses of manufacturers of filter stones. (See "Pottery.")

Filtering Plant.—See "Pumping Station."

Founders.—See "Distilling Apparatus."

Fuel-oil Burners.—Hugh S. Morrison, Richmond, Va., wants information on fuel-oil burners as applied to furnaces, especially house furnaces.

Fuel-oil Engines.—See "Engines."

Gasoline Engine.—See "Engine."

Glass Manufacturers.—Sea Breeze Chemical Co., Birmingham, Ala., wants catalogues of bottles.

Grist Mill.—Delaperriere Land & Investment Co., wants prices on grist mill.

Grist Mill.—Delaperriere Land & Investment Co., Winder, Ga., wants prices on grist mill.

Heading Machinery.—See "Stave Machinery."

Heating.—See "Building Equipment and Supplies."

Heating Apparatus.—R. C. McBee, mayor, Lexington, Miss., will open bids September 13 for installing steam-heating plant in school building, Lexington. Plans and specifications may be seen at the mayor's office or at the office of R. H. Hunt, architect, Chattanooga, Tenn. Usual rights reserved.

Heating Plant, etc.—Sealed proposals will be received until August 30 at the office of Baldwin & Pennington, architects, 311 North Charles street, Baltimore, Md., for work and materials required in connection with the House of Correction, consisting of window guards and gratings, new cells, plumbing and ventilating for same, central heating plant and certain materials covered by plans and specifications, which can be seen at office of John Waters, superintendent, 23 East Centre street, Baltimore, Md. Usual rights reserved.

Laundry Equipment.—Pearl Steam Laundry, H. W. Rose, proprietor, Franklin, La., wants prices on machinery and equipment for steam laundry with a capacity for turning out \$200 worth of laundry per week.

Best Medium for Information.

WELSBACH COMPANY,
1421 North Charles Street.

Baltimore, Md., July 12, 1904.

Manufacturers' Record Publishing Co., Baltimore:

Gentlemen—In renewing our subscription to the MANUFACTURERS' RECORD for another year, I take pleasure in assuring you this paper has been of great assistance to us in securing business within the burnt district. It has kept us at all times well advised of the movements of prospective customers, and the details of this information have been remarkably accurate. We are pleased to recommend it as the best medium for information concerning new Baltimore.

Very truly yours,

FRANK W. EMORY, Manager.

date addressing machine for about 5000 names.

Air Compressor.—See "Mining Equipment."

Art Glass.—Rev. J. H. Felts, pastor Methodist church, Corinth, Miss., wants bids on art glass.

Boiler.—See "Engine and Boiler."

Boilers.—See "Engines and Boilers."

Boilers.—See "Lumber Mill."

Bottles.—See "Glass Manufacturers."

Bottle Stoppers.—Sea Breeze Chemical Co., Birmingham, Ala., wants catalogues from manufacturers of patent (sprinkler) tops for bottles.

Brazing Machine.—J. W. Ellison, Comstock, Texas, wants to purchase a brazing machine for brazing steel tubing.

Brick.—See "Street-paving Material."

Brick Machinery.—Burroughs & Mankin, Inc., 812 East Main street, Richmond, Va., wants to purchase a 30,000 to 40,000 machine, soft mud; also a drier of like capacity with conveyor, etc., and would like to correspond with manufacturers.

Brick Machinery.—Burroughs & Mankin, Inc., 812 East Main street, Richmond, Va., wants to purchase a 30,000 to 40,000 machine, soft mud; also a drier of like capacity, with conveyor, etc., and would like to correspond with manufacturers.

Bridge Construction.—James E. Horton, chairman Board of Commissioners of Limestone county, Athens, Ala., will open bids September 17 for building an iron and steel bridge over Elk river at Easter's Ferry; also for building an iron and steel bridge

cotta, marble, concrete and cement work, steel and iron work, roofing, plastering, millwork, painting and glazing, hardware, metal frames and sashes, wireglass, electric wiring and fixing, plumbing, heating system, freight elevator, electric pump. Bids to be in August 17.

Building Equipment and Supplies.—Frank Brand, Rodney, Miss., wants a store front.

Cannery Equipment.—Arkansas Fruit and Vegetable Growers and Shippers' Association, Pine Bluff, Ark., wants quotations on machinery and equipment for canning fruits and vegetables.

Cement.—See "Street-paving Material."

Cork Manufacturers.—Sea Breeze Chemical Co., Birmingham, Ala., wants catalogues from manufacturers of corks for bottles.

Corn-mill Equipment.—Chas. Miles, Standardsville, Va., wants corn burrs and equipment for cornmeal mill.

Cotton Gin.—Delaperriere Land & Investment Co., Winder, Ga., wants prices on gins, etc.

Cotton-mill Machinery.—W. E. Waldrop & Bro., Greens, S. C., want to correspond with dealers in batting cards for manufacturing cotton bates.

Crane.—Dwight F. Hill & Co., Baltimore, Md., want to purchase new or second-hand steam or electric traveling crane, 25 to 50 feet span to lift, from 5 to 10 tons. State price, full particulars, etc., and send cuts.

Crate Machinery.—W. H. & J. H. Brazier, Jolly, Ga., want prices on new and second-hand machines for making peach crates.

Line-kiln.—John G. Duncan Company, 316 Jackson avenue, Knoxville, Tenn., wants addresses of manufacturers, and best price delivered in London, Tenn., on a lime-kiln outfit.

Looms.—See "Weaving Machinery."

Lumber Mill.—E. L. Folk & Co., Suffolk, Va., is in the market for lumber plant complete with a daily capacity of 10,000 to 15,000 feet finished hardwood flooring and casing, including boilers, engines, dry-kilns, etc. Quotations wanted on plant complete, also on equipment separately.

Lumber.—Willms & Willms, 747 West Pratt street, Baltimore, Md., want to purchase in carload lots 4-4 and 5-4 plain and quartered kiln-dried oak cuttings of following lengths: 12, 16, 17, 19½, 21½ inches, widths from 6½ to 18½ inches. The 5-4 must be clear on both sides; 4-4 need be clear on one side only.

Mining Equipment.—Southwestern Mining & Milling Co., Smithville, Ark., wants prices on steam rock drill or air compressor.

Mining Equipment.—See "Railway Equipment."

Paving Material.—City of Austin, Texas. George L. Hume, secretary Paving Committee, wants addresses of manufacturers of hard brick suitable for paving.

Piping.—See "Water-works Equipment."

Plumbing.—See "Building Equipment and Supplies."

Plumbing.—See "Heating Plant."

Pottery.—Richmond Foundry & Manufacturing Co., 18th and Cary streets, Richmond, Va., wants addresses of manufacturers of porous pottery, such as is used in certain electric batteries. (See "Filter Stones.")

Pumping Station.—City of Danville, Va., will ask for bids about September 1 on filtering plant and pumping station to be placed on the Dan river at a cost of \$100,000. Lockwood, Greene & Co., Boston, Mass., are preparing plans.

Pumps.—See "Water-works Equipment."

Railway Equipment.—Hughes Creek Coal Co., Roe, W. Va., is in the market for about 75 tons good relay 30-pound steel T rails, with splices to match, or new 30-pound rails, if right price.

Railway Equipment.—Emil Mueller, Alsen, N. Y., is in the market for several miniature railroad cars for use as models. (This address was erroneously reported last week as Alsen, N. C.)

Railway Equipment.—W. J. Van Kirk, Samson, Ala., wants 10 miles of 40-pound rails.

Railway Equipment.—Antler Coal & Coke Co., E. Goodman, president, Room 10, Law Building, Lynchburg, Va., wants prices f. o. b. Antler siding, W. Va., for about 15 tons of 12-pound T relaying rails.

Railway Equipment.—Guest River Coal & Coke Co., Essersville, Va., is in the market for a six to eight-ton 36-inch gauge locomotive for hauling coal from inside the mines to the tipple, or a rope haulage.

Railway Equipment.—Hardwood, care of the Manufacturers' Record, is in the market for and desires specifications and location of locomotives, standard gauge and type, from 50 tons up, also a 10 or 50-ton Shay geared engine.

Roadmaking Machinery.—John G. Duncan Company, 316 Jackson avenue, Knoxville, Tenn., is in the market for rock crusher having capacity of 60 to 100 yards a day, steam rock drill, one 10-ton road roller (all second-hand).

Road-rolling Machinery.—Oklahoma Paving & Construction Co., Guthrie, O. T., is in the market for new or second-hand street roller, about eight tons.

Roofing.—W. S. Glenn, Winnsboro, Texas, wants about 50 squares of roofing.

Roofing Tile.—Armitage Manufacturing Co., 320-330 Williamsburg avenue, Richmond, Va., is in the market for 100 squares of vitrified tile, one inch, for flat roof, to be imbedded in cement.

Saw-mill.—Stantonsburg Supply Co., Stantonsburg, N. C., is in the market for new or second-hand saw-mill outfit (exclusive of boiler and engine) to cut 8000 to 15,000 feet of lumber per day.

Scales.—Edwin Trumble, Kingville, S. C., wants to buy a pitless wagon scale—that is, a platform scale above ground, thereby avoiding the necessity of digging a pit.

Seating.—Rev. J. H. Felts, pastor Methodist church, Corinth, Miss., wants bids on circular-pew seating.

Sewerage.—See "Water-works."

Sewerage.—Sealed proposals will be received until August 27 by the City Clerk, Laurel, Miss., for furnishing all material and labor and constructing a sanitary sewer

system according to plans and specifications of the Iowa Engineering Co. of Clifton, Iowa, on file in the City Clerk's office, approximating 36 feet 20-inch cast-iron pipe, 4200 feet 20-inch vitrified sewer pipe, 2027 feet 18-inch vitrified sewer pipe, 367 feet 15-inch vitrified sewer pipe, 644 feet 12-inch vitrified sewer pipe, 1516 feet 10-inch vitrified sewer pipe, 11,887 feet 8-inch vitrified sewer pipe, 43 manholes and 13 flush tanks. Certified check for \$1000, payable to the city treasurer, must accompany each bid. Usual rights reserved.

Shingle Mill.—Dwight F. Hill & Co., Baltimore, Md., wants to buy shingle mill; second-hand preferred. State price, give full particulars, etc.

Shingle Mill.—Delaperriere Land & Investment Co., Winder, Ga., wants prices on shingle mill.

Shingle Mill.—National Engineering Co., J. F. Simonson, vice president and general manager, 17 Converse Building, Houston, Texas, is in the market for a complete up-to-date equipment for shingle mill.

Stave Machinery.—Kentucky Stave Co., 71 Todd Building, Louisville, Ky., is in the market for machinery to manufacture barrel staves and heading.

Stave Machinery.—C. H. Wright Stave Co., Huntingdon, Tenn., is in the market for one double, independent, Crossley jointer; one 24-inch Whitney barrel saw, complete, latest improved; one double-bolt equalizer, Greenwood or Kentucky make; one Oram stave planer (all second-hand).

Steam Plant.—See "Sugar Mill."

Street Paving.—Board of Street, Sewer and Drain Commissioners, B. Gray Timmatt, chairman, Norfolk, Va., will open bids August 29 for paving Granby street with about 7000 square yards of asphalt and about 3300 feet granite curbing. Specifications can be had at the office of the city engineer. Certified check for \$500 on a Norfolk bank and payable to H. S. Herman, city treasurer. Usual rights reserved.

Street-paving Material.—Oklahoma Paving & Construction Co., Guthrie, O. T., is in the market for paving brick, Portland cement, etc.

Sugar Mill.—W. S. Glenn, Winnsboro, Texas, wants cane mill with steam outfit.

Tank.—See "Water-works Equipment."

Tile.—See "Roofing Tile."

Tiling.—See "Building Equipment and Supplies."

Tower.—See "Water-works Equipment."

Water-works.—Water and Sewer Committee, A. D. Smith and S. T. Dorsett, Spencer, N. C., will receive proposals for engineering and constructing a water-works and sewer system at Spencer. Bids will be considered from parties desiring to build and own plant or for engineering the work for the municipality.

Water-works Equipment.—Board of Public Works, Lakeland, Fla., will open bids August 29 for one tower and steel tank, two pumps, cast-iron piping, hydrants, etc., for water-works plant; also machinery for increasing capacity of electric-light plant. Specifications and other particulars furnished upon application. Usual rights reserved.

Water-works Equipment.—Allegheny County Improvement Co., Cumberland, Md., wants prices on equipment for water-works.

Weaving Machinery.—Robert Wainwright, West Point, Ga., wants addresses of manufacturers or dealers in hand looms for weaving laces suitable for ladies' dresses.

Well-drilling.—City of Apalachicola, Fla., wants bids for sinking an artesian well. For information address City Clerk or J. E. Graves.

Woodworking Machinery.—W. H. Freeman, Sumter, S. C., wants to buy planers, shapers, combination saws, hand tools, etc.

Woodworking Machinery.—See "Stave Machinery."

Woodworking Machinery.—See "Shingle Mill."

The Namquilt Mill Sale.

The Namquilt Mill property of the Richmond Manufacturing Co. at Bristol, R. I., was sold August 9. The mill real estate, assessed for \$25,000, was sold for \$18,330 to C. B. Rockwell of the Cranston Worsted Mills, Bristol. Six pieces of dwelling-house property, assessed for \$12,300, sold at \$12,700. All the real estate was sold subject to this year's taxes. The machinery in the repair shop, the only machinery sold, was sold in lots, and the proceeds amounted to \$1294.50. There was a very large attendance at the sale, those present coming from all over New England, as well as from nearby places. Messrs. J. E. Conant & Co., auctioneers, Lowell, Mass., were in charge.

MEXICO.

Brick Works.—John W. Poble of the City of Mexico has taken an option on the Dorner & Baumeister brick works, and proposes organizing a company of American capitalists to purchase, enlarge and operate the plant.

Furniture Factory.—J. Salomon of the City of Mexico contemplates establishing a plant for the manufacture of furniture and similar products, about \$250,000 to be invested.

Gold and Silver Mines.—Patrick Fitzgerald of Mascota, Jalisco, proposes developing gold and silver bearing properties in the Navidad Camp.

Gold Mines.—Prior Adkins of Norman, O. T., has secured and will develop gold-bearing properties on the Bonito river, State of Sonora, about 140 miles south of Nacozari, New Mexico.

Gold Mines.—W. H. Hiestand of New Orleans, La., has bought an interest in mining properties near Santa Rosa, Sonora, and will begin developments.

Gold Mines.—Zac Samuels, mining engineer, of Denver, Col., represents himself and Colorado capitalists who are about to purchase for development some Mexican mining properties. He is now registered at the Grand Hotel, City of Mexico.

Mining and Smelting.—The Laredo Mining & Smelting Co., recently chartered, has effected permanent organization and will arrange for the early commencement of mining developments, and will later probably build a large smelter. C. G. Brewster is president; Thomas W. Dodd, vice-president, and Wm. H. Banks, secretary, all of Laredo, Texas.

Mining Plant.—The National Development Co. of Toluima, Queretaro, is preparing plans for the erection of a 100-ton cyanide mill.

Milling Plant.—The Parral Milling Co. of Parral, Chihuahua, will increase its plant's capacity from 70 tons daily to 100 tons. A. H. Lubeck is the manager.

Mining Properties.—N. O. Bagge of Los Angeles, Cal., has purchased for \$100,000 valuable mining properties in the Sierra Almoloya district, and will institute extensive developments, building an electric-power plant.

Paving Contract.—The State of Guadalajara has awarded contract to the Mexican Asphalt Paving & Construction Co. of the City of Mexico for about 15,000 square meters of paving work—asphaltic concrete. Paul H. Harwood, engineer of the company, will be in charge.

Railway-tie Works.—The Compania Industrial de Durmientes de Cemento, Armado, S. A., has been organized, with a capital stock of \$210,000, for manufacturing artificial railway ties from cement armado. Sebastian Camacho, Luis La Barre, Carlos Eisenman, E. L. Del Tunzo and Salvador Echagaray, all of the City of Mexico, are the directors.

Silver, Lead and Iron Mining.—William Schoellman of Monterey, New Leon, proposes organizing a stock company, with a capital stock of \$50,000, for the purpose of developing mineral properties. It is stated that the properties have assayed silver, lead and iron in good percentages.

Silver Mines.—Frederick Hamm of Douglas, Ariz., and A. B. Byron of Albuquerque,

N. M., have begun the development of silver-bearing properties in the State of Sonora, formerly in operation as mines.

Silver Mines.—N. S. Finch of Bacoachi, Sonora, has begun the development of silver-bearing properties.

Smelting Plant.—Alfred Camponella and associates of Guadalajara, Jalisco, are endeavoring to complete arrangements for erecting their proposed smelting plant.

Stamp Mill.—It is rumored that the Nogales Copper Co., Cerro Prieto, near Magdalena, Sonora, will build a 100-stamp mill to replace present plant. Company also has offices at Nogales, Ariz.

Sulphate of Copper Works.—Sr. Trinidad Garcia, member of Congress for the State of Zacatecas, will establish a plant for manufacturing sulphate of copper in the City of Mexico.

Timber-land Developments.—Philip C. Snodgrass of Nogales, Ariz., and H. E. Kemp of Los Angeles, Cal., have purchased and will develop a large tract of red and white oak timber on the Tames river, in the State of Tamaulipas.

Timber-land Developments.—Don Faustino Martinez of the City of Mexico has a government concession to develop 1,729,700 acres of timber land on the Yucatan peninsula.

Railways.

Electric Railway.—Reported that the Monterey Electric Street Railway, Light & Power Co., organized in Philadelphia and represented by Edward F. Walker, 170 Broadway, New York; C. W. Reeve and George D. Howell, and which purchased the Slayden Street Railway interests of Monterey, has also purchased the Empresa Mexicana lines and the Mackin & Dillon concessions; furthermore, that Messrs. Mackin & Dillon as contractors will now build the proposed electric railway systems in Monterey.

Electric Railway.—S. L. Pearce of Louisville, Ky., is reported to have secured liberal subscriptions for a street-railway system at Chihuahua, and will convert the Mineral Railroad into an electric railway, besides adding six miles of track to the line.

Steam Railroad.—The Monte Alto Railroad will, it is reported, build an extension of its line—which is narrow gauge—into the City of Mexico. L. Hupin is general manager in the City of Mexico.

Steam Railroad.—The Zico & San Rafael Railroad will, it is reported, extend its line from Apasco to Atlixco. M. C. Juarez, general superintendent of the Mexican & Great Eastern Railway at the City of Mexico, may be addressed.

Steam Railroad.—The Amparo Mining Co., it is reported, contemplates building a railroad connecting its mines at Etzatlan, Jalisco, with the Mexican Central Railway, the road to cost about \$40,000. Charles K. Smith of the firm of Charles K. Smith & Co. of Philadelphia is the president.

Steam Railroad.—Messrs. Gonzales and Bermejo de Celaya and Salvatierra are reported to be promoting a railroad to extend from Jural to Salvatierra, a station on the National Railroad, and it is to be built so as to touch Lake Yuriria, where a line of boats is to be established by the company.

INDUSTRIAL NEWS OF INTEREST

Ice Plant for Sale.

An established ice plant is offered for sale by George E. White of Rahway, N. J. Mr. White states that the plant is on the plate system, and includes facilities for harvesting and wholesale business. It is located on a lake of running water.

Sale of Lumber Plant.

Parties in the market for lumber-mill machinery are invited to address the Valdosta Foundry & Machine Co., Valdosta, Ga. This company offers a complete saw-mill, planing mill, dry-kilns and log train, either as a whole or in lots to suit.

Carpet Mill at Receiver's Sale.

The carpet-manufacturing plant of the Gaffney Carpet Manufacturing Co. will be offered for sale on September 5 to the highest bidder. It will be sold in lots of building and machinery, wood and fuel, raw material and manufactured products, supplies, etc., on cash terms. For full details address H. G. Wheat, receiver, Gaffney, S. C.

Wants Purchaser for Coal Mine.

The owners of an established coal-mining plant in the great Kanawha coal fields of West Virginia are seeking a purchaser for their plant. They state that the plant is located on the Chesapeake & Ohio Railway, and can load 100 tons of coal daily. Full de-

tails regarding this proposition can be obtained by addressing Coal Mines, care of the Manufacturers' Record.

Opportunity for a Tanner.

The executors of a tannery plant desire to sell the property, and state that a practical tanner with some capital can obtain additional capital from investors located near the plant. The latter has free water, bark is cheap, good hides are obtainable, and the product can be marketed readily. For further information address E. J. Childers, Pulaski, Tenn.

More About Huennekes System Bricks

In addition to the facts about "Huennekes System" bricks presented last week, it is of interest to state that the Tennessee Granite Brick Co.'s plant at Memphis has secured the contract to furnish bricks for the Tennessee Trust Co.'s 15-story office building, and that plants in Fort Edward and Glens Falls, N. Y., are furnishing bricks for many buildings in New York city. Including an Italian banking house. At Asheville, N. C., the French Broad Granite Brick Co. has been organized, and is building a plant at which the sand will be conveyed from one shore of river to the other by a cable bucket conveyor. Another factory near Winchester, Ky., is furnishing bricks for a five-story hotel in that city and for buildings at Paris

and elsewhere in Kentucky. All these brick plants are built on the "Huennekes System" for manufacturing bricks from sand and lime. This is the system which the H. Huennekes Co. controls. Inquirers for other particulars can address the H. Huennekes Co. at its main offices, 114 Liberty street, New York.

About Portsmouth Steel Co.

It is announced that on and after September 1 Secretary E. T. Connors of the Portsmouth Steel Co., Wheeling, W. Va., will be located at the works in Portsmouth, Ohio, from which point he will attend to all inquiries, sales and such other business as will come under his jurisdiction. The company has realized that it was handicapped by having the sales department so far removed from the works, and under the new arrangement will more promptly serve patrons. After September 1 all inquiries and orders should be addressed to Portsmouth, Ohio, and all remittances to Wheeling, W. Va.

The Buckeye Machinery Co.

In order to assist in supplying the demand for high-grade machinery, both new and second-hand, there has been organized a new company that will offer complete facilities to buyers of mechanical equipment. The company will handle all kinds of equipment, including engines, boilers, heaters, pumps, saw-mills, iron and wood working machinery, railway shop equipment, etc. It is to be known as the Buckeye Machinery Co., and has a capital of \$40,000. Offices have been established at 397 New Hayden Building, Columbus, Ohio, where correspondence can be addressed by those who are in the market for machinery of any kind.

Some Zeinleker News.

The Walter A. Zeinleker Supply Co. in St. Louis has recently combined its rail yards in East St. Louis, and is now located on the Southern Railroad tracks and 24th street. A large stock of rails, new and relay, and a complete line of accessories, such as angles, splices, bolts, spikes, etc., are on hand. The company is prepared to build logging cars and other equipment on short notice, and makes a specialty of repairing such material. It also furnishes locomotives, cars, etc., of any description, and has equipment located in many sections of the country. A daily bulletin is published showing the location of the different offerings. This bulletin will be mailed to any address upon application. The Zeinleker 850-page catalogue is one of the most complete ever published, and should be seen by everyone interested in the supply business.

TRADE LITERATURE.

Second-Hand Saw-Mill Machinery.

Buyers of saw-mill machinery who can be suited in second-hand equipment are advised to write the James H. Link Machinery Co. of Williamsport, Pa., for August list of bargains. The machinery offered is rebuilt and in good condition for use. It warrants investigation, and includes gang mills, log jacks, mortisers, matchers, molders, re-saws, rip saws, steam feeds, complete band mills, circular mills, engines, boilers, etc.

The Southern Saw.

A mailing card now being distributed by the Southern Saw Works of Atlanta, Ga., calls attention to that company's celebrated "Southern" saw (solid and inserted tooth), shingle saws, collars, mandrels, etc.; also to inserted chisel bits and shanks for all styles of saws. The company's card also constitutes a neat calendar for the months of July, August and September. It presents a bird's-eye view of the Southern Saw Works plant.

Take Off Your Hat to Myers.

One of the most persistent advertisers in the mechanical field is the firm of Messrs. F. E. Myers & Bro. of Ashland, Ohio. Their latest advertising novelty nicely illustrates their descriptive phrase, "Take Off Your Hat to the Myers." It represents a buyer about to open a door, and as he turns the knob and prepares to enter he raises his hat in proper obeisance and is introduced to the Myers force and lift pumps, hay tools, "Stayon" doors, hangers, etc.

Giant Portland Cement.

Reports from all sections of the world call attention to the increased demand for Portland cement. As is well known, this cement is daily entering into new avenues of usefulness. It is specified by the most prominent engineers and architects for buildings, tunnels, bridges, reservoirs, dams, foundations, fireproofing, etc. The American Cement Co., 22 South 15th street, Philadelphia, Pa., manu-

factures the famous Giant Portland Cement, which is consumed wherever the highest-grade product of its character is demanded. The company has issued a new pamphlet called "The Test of Time," presenting information that enables the reader to understand the great merits of Giant Portland Cement and to know some of the very important work on which it has been exclusively used. Ask the company for "The Test of Time."

Book for Users of Saws.

Users of saws can obtain a leather-bound memorandum book especially useful to them if they will request one of the James Ohlen & Sons Saw Manufacturing Co., Columbus, Ohio. This company is well known throughout the entire country as a producer of high-grade saws, and its wares are used in many of the leading woodworking plants, saw-mills, planing mills and other establishments where saws are needed. L. W. Seymour is general manager of the company.

Tanks, Towers and Tubs.

The W. E. Caldwell Company of Louisville, Ky., is distributing its catalogue of tanks, towers and tubs of all kinds. It presents one of the most extensive lines of any manufacturer in the class indicated, and in all sections of the country Caldwell tanks and towers have been adopted, to the great satisfaction of numerous buyers. The company builds tanks of any size, for any purpose, using Louisiana red cypress, white pine and other woods as required or deemed advisable. Send for latest catalogue.

"Cotton Chats" for July.

Every user of cotton machinery is interested in that publication which the publisher, the Draper Company of Hopedale, Mass., entitles "Cotton Chats." This leaflet is issued regularly, and presents facts concerning the successful cotton-mill machinery which the Draper Company builds. Its July issue, No. 23, tells about the Rabbit Centrifugal Bobbin Clutch, twister weight, warper creels, etc. Mention is also made of the death of William Welch, who was with the Draper establishment for 21 years. He was well known, and a wide range of friends will miss his presence.

The "Southern's" Coal Notes.

In pursuance of its policy to aggressively approach the trade, the Southern Coal & Coke Co. has begun the publication of a monthly, entitled The "Southern's" Coal Notes. Retail coal dealers and steam coal users will find interesting information in the Coal Notes explanatory of the company's facilities and the quality of its product. The Southern Coal & Coke Co. has its general offices at Knoxville, Tenn., and operates high-grade steam and domestic coal mines in the Jellico district of Tennessee and Kentucky, the daily output being 2000 tons. Send for sample copy of the new paper.

New Sturtevant Economizer Catalogue.

That the B. F. Sturtevant Co. of Boston, which recently moved to its new office and works at Hyde Park, Mass., is to press the sale of its economizers is evidenced by the new economizer catalogue issued. This catalogue contains the details of the Sturtevant Standard and Pony types of economizers in comparison with those of other makes, the advantages, sizes, weights, accessibility, repairing, etc. It also treats of the subject of mechanical draft and natural draft, and is of interest to all steam-users. It may be obtained by anyone interested in the subject.

Jeffrey "Century" Rubber Belt Conveyors.

Catalogue No. 67 A of the Jeffrey Manufacturing Co., Columbus, Ohio, is devoted to illustrations and terse descriptions of the company's "Century" Rubber Belt Conveyors. These conveyors are the embodiment of the highest grade of material and workmanship, and are built for carrying coal, ores, broken stone, sand, gravel, chemicals, shavings, chips, refuse, and, in fact, any other material, to almost any distance. The Jeffrey equipments are today demonstrating their efficiencies and economies in many industrial establishments and elsewhere. If interested, send for catalogue.

Up-to-Date Facts About Graphite.

Graphite is a material that has come into extensive use for numerous purposes. It is being used universally as a prime ingredient in the production of perfected lubricating compounds, and probably no manufacturer of graphite is better known than the Joseph Dixon Crucible Co. of Jersey City, N. J. This company, in its efforts to keep people fully informed as to graphite, issues a monthly publication called "Graphite." The August number is now being distributed.

Its contents include "Graphite as a Lubricant," "Graphite for Boilers," "Uses of Flake Graphite on Shipboard," "Graphite for Threaded Connections," "Something About Belts and Pulleys," "Flake Graphite for the Lubrication of Air Compressors," etc. If you want up-to-date graphite facts, write for a specimen copy of "Graphite."

De Laval Steam Turbine and Electrical-Driven Centrifugal Pumps.

The past two years have witnessed the remarkable developments of the steam turbine and its application to the driving of electrical generators. But it is not so well known that the turbines constructed by the De Laval Steam Turbine Co. of Trenton are also well adapted for driving centrifugal pumps. The high efficiency of the steam turbine being generally recognized, it is evident that if an efficient centrifugal pump can be combined with a steam turbine the resulting efficiency of the unit will be high. In order to present valuable facts regarding what has been accomplished in this direction, the D'Olier Engineering Co. of Philadelphia has issued Bulletin, Series T, No. 7. This publication presents the facts about De Laval steam turbines and electrical-driven centrifugal pumps. Send for a copy of the bulletin.

Why Use a Circuit Breaker?

Electrical engineers and many others interested in up-to-date electrical appliances will find valuable information in the illustrated booklet issued under the title of "Why Use a Circuit Breaker." The publication tells a forceful story, presenting facts as to the use of a circuit breaker to the consequent cutting down of expense in the electric plant's operation. Especial stress is laid on the "I T E" Circuit Breakers manufactured by the Cutter Company, 19th and Hamilton streets, Philadelphia, Pa. The booklet comprises a brief story of why a circuit breaker should be used and how, and the cost of it. It presents an explanation of the best way to afford automatic and instantaneous protection to motors and generators in a better way (and cheaper in the end) than by using fuses. The "I T E" Circuit Breakers are made in all sizes and for every variety of installation.

How to Avoid Valve Troubles.

"Valve Troubles and How to Avoid Them" is the title of a booklet which contains valuable information on the subject indicated. Its first part is devoted to a summary of the difficulties, if any, commonly encountered in the installation and use of valves, together with some suggestions for the remedy of such difficulties. The balance of the book illustrates and describes the principal types of valves manufactured by Messrs. Jenkins Bros. The first valve shown is the Jenkins Bros. Brass Globe Valve, probably the type most extensively used, there being few plants in this country where there are none in use, and there are but few engineers without a knowledge of its merits. The Extra-Heavy Brass Valves are next shown, these being designed for a working pressure of 150 to 300 pounds, or for hydraulic work on pressures up to 1000 pounds. It is the wish of the publisher of the booklet named that every engineer and steam user have a copy of it. Requests can be addressed to Jenkins Bros. at 71 John street, New York.

Western Block Co.'s New Catalogue.

Among the smaller articles that fulfill important duties in the routine of industrial and commercial life are tackle-blocks, sheaves and kindred products. So important are the duties of such articles that their design and manufacture has been made a specialty by some of the best-known inventors and makers in the American field of activity. Among the most successful of these is the Western Block Co. of Lockport, N. Y., which manufactures the Anvil Brand wood, wrought-iron and steel tackle-blocks, sheaves, etc., of all kinds and in all the sizes ever called for or demanded for special purposes not heretofore considered. The Western Block Co. has issued its illustrated catalogue and price-list for 1904. This is a clothbound book of some 90 pages, 10x11 inches in size, wherein is presented in a convenient form all the data necessary to enable the reader to comprehend at a glance the scope of the Western Block Co.'s field of endeavor and the cost of the various devices enumerated. Both dealers and users of tackle-blocks and similar equipment will find this one of the most complete catalogues of its class ever presented for their use. Write for a copy.

The Hipwell Telephone.

One of the most important modern inventions that has served to facilitate business and social relations to a marvelous degree is the telephone. Its introduction some years

ago has been followed by its general use, and nowadays wherever it is not found there are steps being taken to provide telephone accommodations. During the past several years the establishment of telephone systems has been greatly on the increase, especially in rural sections, due to the designing and manufacturing of the instruments, switch-boards and other apparatus required so as to be sold at a comparatively low price compared with former prices. One of the most successful of telephones is the Hipwell Telephone, made by the Hipwell Manufacturing Co., 831 North avenue, Allegheny, Pa. This company builds every part of its phone from raw material and sells direct. Its aim has been to produce a phone as near perfection as science and mechanical skill would permit, and it has been most successful in so doing. The Hipwell Arc Lamp, for direct or alternating current, is also made by the company. Full details regarding the Hipwell specialties can be obtained by inquiry to the main establishment at Allegheny, as above noted.

National Bolt and Nut Machinery.

Manufacturers likely to be interested in the most modern machinery for making bolts and nuts, etc., will find valuable facts presented in the National Machinery Co.'s new catalogue. The company takes pleasure in calling attention to the fact that the date of issue of this catalogue marks its thirtieth anniversary, the business conducted having been established in 1874. Its capacity has been doubled in the last two years by the addition of new buildings and machinery, and the present facilities are most excellent for the accurate and economic production of high-grade work. The National's aim is to excel in all matters pertaining to the design of bolt, nut and wire-nail machinery, and no expense has been spared in providing special tools and jigs to assist in securing this result. The number of new machines and improvements recently added thoroughly indicate that these efforts have been concentrated upon furnishing the trade with the latest and most improved machines. On the pages of the catalogue is illustrated the National line in a minimum of space, and does not include illustrations of all the machines when a few illustrations fairly represented the whole line. For detailed specifications and other facts write the National Machinery Co., Tiffin, Ohio. Ask for catalogue.

Graphite to Ease Machining.

Electro-chemists and other technical men will find interesting data presented for their consideration in Bulletin No. 6, issued by the International Acheson Graphite Co. of Niagara Falls, N. Y. The publication tells about the adaptability of Acheson graphite articles or ease of machining. It gives many suggestions regarding the machining and assembling of Acheson Graphite Electrodes for electrolytic and electro-metallurgical processes, as also for use as stirring rods, bushings, circuit-breaker contacts, molds, etc. Acheson graphite articles are manufactured by treating in the electric furnace properly prepared amorphous carbon articles of some regular, convenient form and causing their conversion into graphite. Their principal characteristics are great purity, high electrical conductivity, resistance to oxidizing or disintegrating action and lubricating properties. They are manufactured in a manner which avoids the use of the hard vitrified clay bonds usually associated with graphite articles. Being pure graphite, with all the characteristics of this form of carbon, they can be cut or machined with the greatest ease and at slight expense. The figures and data given in the Bulletin relate chiefly to this feature, and will give some idea of the extreme adaptability of Acheson graphite articles and the varied purposes for which they are proving valuable. The statements made are not theoretical deductions and estimates, nor the results of mere experiments, but represent actual figures obtained in regular commercial work. Write the company for copies of Bulletin No. 6.

The Weston Employees' Club.

It is conceded that one of the weightiest problems confronting the twentieth century is the relation between capital and labor. Some manufacturers have made especial endeavors to meet the conditions in their own establishments, and reference to one of these manufacturers is of timely interest. The Weston Electrical Instrument Co. of Newark, N. J., is the manufacturer referred to, and a complete statement concerning the social features connected with its administration and organization is presented in an illustrated pamphlet prepared for the Louisiana Purchase Exposition at the request of the Bureau of Statistics of Labor and Industries of the State of New Jersey. The social features of the company are contained in

the Weston Employees' Club. A treble purpose prompted the company in planning for the safety, comfort, health, recreation and prosperity of its employees—the altruistic idea, the material side, and a determination to exercise no patronizing control, but to create the club plant and hand it over to the employees, on whom should devolve the entire responsibility of success or failure. The project has been entirely successful, and just how this has been accomplished is shown in the publication above mentioned. The pamphlet should receive the careful perusal of all interested in the promotion of harmony between employer and employee, especially of those who operate manufacturing plants. Other features of interest are introduced in presenting valuable details regarding the mechanical and manufacturing branch of the Weston Electrical Instrument Co.

Labor-Saving Looms.

It is well known that some of the most wonderful inventions in the mechanical world are those connected with the manufacture of cotton goods. Cotton-spinning and weaving machinery and accessory apparatus comprise various kinds of machines which have important and intricate duties to perform, and American inventors and machinists have been foremost for many years in perfecting them. Possibly the most interesting and valuable of machines perfected during recent years is the Northrop Loom, which saves labor to such an extent that manufacturers who have become acquainted with its meritable features have ordered over 100,000 of them since their first introduction nine years ago. "Labor-Saving Looms" is the title of a cloth-bound book of some 200 pages which has been issued as a brief treatise on plain weaving, and the recent improvements in that line, with special reference to the Northrop Looms, manufactured by the Draper Company of Hopedale, Mass. The publication is one that no progressive cotton manufacturer can fail to read without being the gainer thereby. He will acquire valuable information regarding the latest cotton-weaving machinery perfected by inventive mechanical skill and the best-equipped machine shops, and how to better conditions in the cotton mill in the promotion of profits. The book tells the entire story of the Northrop Loom from its inception to its present state of perfection, and besides contains a complete description of its operation, facts which will at once attract the attention of those manufacturers (and there are still some) who are not acquainted with the Northrop and are not aware of the revolution it is working in the cotton-manufacturing industry. The book "Labor-Saving Looms" is the 1901 edition, and as rapidly as improvements are made to the looms additional pages of description are issued to be inserted.

An Engine of Exceptional Economy.

In view of the interest manifested in the steam economy of prime movers, both reciprocating and turbine types, it is impossible to pass without remarking some results lately obtained in an official pumping-engine test at the Park avenue pumping station, Chicago. The engine is of the Worthington duplex, reciprocating, triple-expansion type, having semitoratory steam valves, but no fly-wheel. The latter is replaced by compensating cylinders so arranged that their pistons retard the motion of the main piston during the first part of stroke, but assist it towards the close, giving a uniform resultant thrust. The pistons of these auxiliary cylinders work against air under pressure from a tank. The engines are vertical, and the weight of the pistons, plungers and rods is counterbalanced by another auxiliary balancing plunger, also working through the medium of water against air under pressure. The daily capacity of the engine is about 22,000,000 gallons, against a total head of slightly over 121 feet, and 600.9 horse-power were indicated in the test. The duty obtained was 174,735,801 foot pounds per 1000 pounds of steam used, corresponding to an economy of 11.22 pounds of steam per net horse-power delivered in water lifted, or 10.01 pounds of steam per I. H. P. The steam pressure was 144.5 pounds per square inch, with 154° F. superheat at the throttle, the steam cylinders being provided with jackets and re-heaters. Two other engines of the same design in Central Park avenue station and three in Springfield avenue pumping station have all shown under test an economy of steam less than 11 pounds, although the economy per delivered horse-power was not as high as in the test quoted. These tests were carried out under the supervision of the bureau of engineering of the city of Chicago, and, together with the engines and the power station, are fully described in a pamphlet distributed by Henry R. Worthington, 116 Liberty street, New York city.

FINANCIAL NEWS

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office Manufacturers' Record,
Baltimore, Md., August 17.

The activity in Seaboard stocks was the principal feature in the Baltimore stock market during the week ended today. Both the common and preferred sold at advances, and there was a better feeling surrounding all the securities of the company. Consolidated Gas shares also rose, as did the bonds of the United Light & Power Co. Cotton Duck bonds likewise experienced an advance. Bank and trust-company stocks were steady, Atlantic Coast Line issues were firm, and investment securities generally all displayed strength.

In the trading United Railways common sold from 8 1/4 to 8 3/4; the incomes went from 47 to 48, and the last sale at 47 1/2; the 4s sold at 93 to 93 1/4. United Light & Power preferred sold at 35, and the 4 1/2s from 85 1/4 to 88 1/4, with the last sale at 88. Consolidated Gas sold from 78 to 80, last sale at 79 1/4; the 6s at 110 1/2, and the 5s at 113 3/4. Seaboard common sold from 10 1/2 to 12 3/4, reacting to 10 and recovering again to 11 3/4; the preferred from 18 5/8 to 21 1/2, reacting to 19 and recovering again to 21 3/4; the 4s from 74 to 74 1/2; the 10-year 5s at 101, and the 3-year 5s from 91 1/4 to 92. Cotton Duck common sold at 27 1/2; the incomes from 15 3/4 to 16; the 5s from 64 1/2 to 66. G. B. S. incomes sold from 26 1/4 to 24 1/2; the scrip at 25 1/2; the 1sts from 55 to 55 3/4, reacting to 54 1/2.

Bank stocks sold as follows: Farmers and Merchants', 52 1/2 to 53 1/2; Western, 35; Merchants', 170; Marine, 34; Mechanics', 27 1/2; Citizens', 25 1/4; German, 105 1/2.

Sales of trust-company stocks were made at the following prices: Mercantile, 133 to 133 1/2; Baltimore Trust, 232 1/2; Maryland Casualty sold at 45 1/2; United States Fidelity, 101 1/2 and 99; Fidelity & Deposit, 130 and 131.

Other securities traded in were as follows: Atlantic Coast Line, 118 to 120; do. Consolidated 4s, 99 3/4 to 100 1/4; do. new 4s, 90 3/4 and 91; do. Connecticut 4s, 93; Northern Central stock, 83 to 84, reacting to 82, recovering to 83 1/2, dropping again to 82 1/4, with the last sale at 83 3/4; Baltimore City 5s, 1916, 118; do. 3 1/2s, 1928, 108 1/2; do. do., 1930, 108 1/2; United States 4s, 1907, 106; Augusta Railway & Light 5s, 101; Atlanta Consolidated Railway 5s, 106 1/4; Charleston Consolidated Electric 5s, 84 1/4 to 85 1/2; Maryland Telephone 5s, 85 1/2; Georgia, Carolina & Northern 5s, 110; Carolina Central 4s, 92 7/8 and 93; Georgia & Alabama Consolidated 5s, 105 to 105 1/2; Southern Railway 5s, 116 3/4 and 117; Western Maryland new 4s, 84 1/4 and 84 1/2; Silver Springs, Ocala & Gulf 4s, 98 1/2 and 98 3/4; West Virginia Central 6s, 111 1/2; Lexington Street Railway 5s, 100; Atlantic Coast Line of Connecticut, 245; Alabama Coal & Iron preferred, 52 3/4; Consolidation Coal, 65; Atlanta & Charlotte 1sts, 106 3/4.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended
August 17, 1904.

Railroad Stocks.	Par.	Bid.	Asked.
Atlanta & Charlotte	100	157	...
Georgia Southern & Florida	100	35	...
Georgia Sou. & Fla. 1st Pref.	100	95 1/2	100
Georgia Sou. & Fla. 2d Pref.	100	64	67
United Railways & Elec. Co.	50	84	84 1/2
Seaboard Railway Common	100	11 1/2	11 1/2
Seaboard Railway Preferred	100	21 1/2	21 1/2
Charleston Con. Ry., G. & E.	50	9 3/4	12

Atlantic Coast Line	100	119 1/4	120
Atlantic Coast Line of Conn.	100	230	240

Bank Stocks.

Citizens' National Bank	10	25 1/2	27
Commercial & Far. Nat. Bank	100	100	...
Producers & Mech. Nat. Bank	100	300	...
Farmers & Mer. Nat. Bank	40	53 1/2	54
First National Bank	100	132 1/2	135
German Bank	100	106 1/2	107
German-American Bank	100	105	...
Merchants' National Bank	100	167	170
National Bank of Baltimore	100	109	...
National Bank of Commerce	15	23	25
National Howard Bank	10	10 1/2	...
National Marine Bank	30	34	37
National Mechanics' Bank	10	26 1/2	31
National Union Bank of Md.	100	116	119 1/2
Second National Bank	100	182	...
Western National Bank	20	35 1/2	...

Trust, Fidelity and Casualty Stocks.

Baltimore Trust & Guarantee	100	232 1/2	240
Mercantile Trust & Deposit	50	133	135
Union Trust	50	35	37
F. S. Fidelity & Guaranty	100	97 1/2	101

Miscellaneous Stocks.

G. B. & S. Brewing Co.	100	6	7
United Elec. L. & P. Pref.	50	35 1/2	37 1/2
Cotton Duck Voting Trust	100	2 1/2	3
Consolidated Coal	100	64 1/2	67 1/2
George's Creek Coal	100	65	...
Consolidated Gas	100	79	79 1/2

Railroad Bonds.

Albany & Northern 5s	91 1/2	...
Atlantic Coast Line Con. 4s	100	100 1/2
Atlantic Coast Line New 4s	91	92
Char., Col. & Aug. 1st 5s, 1910	115	...
Char., Col. & Aug. 2d 5s, 1910	119	...
Columbia & Greenville 1st 6s, 1916	114	...
Georgia, Car. & North. 1st 5s, 1929	109 1/2	111
Georgia South. & Fla. 1st 5s, 1945	115	...
Georgia Pacific 1st 6s, 1921	122	...
Piedmont & Cum. 1st 5s, 1921	105	...
Raleigh & Augusta 1st 6s, 1926	129	...
Southern Railway Con. 5s, 1904	116 1/4	...
Virginia Midland 2d 6s, 1911	113	...
Virginia Midland 3d 6s, 1916	115	...
Virginia Midland 4th 3-4-5s, 1921	112	...
Virginia Midland 5th 5s, 1926	112	...
West Virginia Central 1st 6s, 1911	111	...
Wilmington & W. Gold 1st 5s, 1935	115	...
Augusta Ry. & Elec. 5s	101	...
Charleston Con. Electric 5s, 1909	85 1/2	86 1/2
Charleston Traction 1st 5s, 1928	101	105
Alt. Railways 1st 4s, 1949	93 1/4	93 1/4
United Railways Inc. 4s, 1949	47 1/4	48
Seaboard 4s	74 1/4	74 1/4
Seaboard 10-year 5s	101	101
Seaboard 2-year 5s	91 1/2	92 1/2
Lexington Railway 1st 5s	99	100
Macon Ry. & Lt. 5s	88	93
Norfolk Railway & Light 5s	80	85
Carolina Central 4s	93	...
Georgia & Alabama Con. 5s	105	105 1/4

Miscellaneous Bonds.

Mt. V. & Woodly's Cot. Duck 5s	66	67
Mt. V. & Woodly's Cot. Duck Inc.	15 1/2	16
G. B. & S. Brewing 1st 3-4s	54 1/2	55
G. B. & S. Brewing 2d Incomes	24 1/2	25
United Elec. Light & Power 4 1/2s	87 1/2	88
Consolidated Gas 6s, 1910	110	110 1/2
Consolidated Gas 5s, 1929	113 3/4	115

SOUTHERN COTTON-MILL STOCKS

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for
Week Ending August 16.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.)	60	71
Aiken Mfg. Co. (S. C.)	85	90
Anderson Cotton Mills (S. C.)	125	125
Aiken Mfg. Co. (S. C.)	105	105
Augusta Factory (Ga.)	75	75
Belton Mills (S. C.)	101	101
Brandon Mills (S. C.)	100	100
Buffalo Cotton Mills (S. C.)	102	102
Buffalo Cotton Mills (S. C.) Pfd.	90	90
Cabarrus Cotton Mills (S. C.)	122 1/2	122 1/2
Chawdoc Mfg. Co. (N. C.) Pfd.	102	102
Clifton Mfg. Co. (S. C.)	88	91
Clinton Cotton Mills (S. C.)	135	135
Courtenay Mfg. Co. (S. C.)	109	111
Columbus Mfg. Co. (Ga.)	89	...
Dallas Mfg. Co. (Ala.)	79	85
Darlington Mfg. Co. (S. C.)	92	92
Eagle & Phenix Mills (Ga.)	109	111
Easley Cotton Mills (S. C.)	104	104
Enore Mfg. Co. (S. C.) Pfd.	78	80
Enterprise Mfg. Co. (Ga.)	78	80
Exposition Cotton Mills (Ga.)	160	200
Gaffney Mfg. Co. (S. C.)	60	71
Gainesville Cotton Mills (Ga.)	75	75
Graniteville Mfg. Co. (S. C.)	131	131
Greenwood Cot. Mills (S. C.) Pfd.	102	102
Greenville Mills (S. C.)	101	101
Hamlet Mills (N. C.)	190	190
King Mfg. Co., John P. (Ga.)	85	90
Lancaster Cotton Mills (S. C.)	109	110
Lancaster Cot. Mills (S. C.) Pfd.	101	101
Langley Cotton Mills (S. C.)	95	100
Laurens Cotton Mills (S. C.)	172	172
Limestone Mills (S. C.)	105	105
Lockhart Mills (S. C.)	85	85
Louise Mills (N. C.)	100	100
Louise Mills (N. C.) Pfd.	102	102
Marlboro Cotton Mills (S. C.)	90	90
Mills Mfg. Co. (S. C.)	95	95
Mills Mfg. Co. (S. C.) Pfd.	100	100
Monarch Cotton Mills (S. C.)	79	85
Monaghan Mills (S. C.)	98	101
Newberry Cotton Mills (S. C.)	120	120
Norris Cotton Mills (S. C.)	105	105
Oden Mfg. Co. (N. C.)	100	100
Orangeburg Mfg. Co. (S. C.) Pfd.	102	102
Orr Cotton Mills (S. C.)	20 1/2	20 1/2
Pacolet Mfg. Co. (S. C.)	88	92 1/2
Pacolet Mfg. Co. (S. C.) Pfd.	99	...
Pelzer Mfg. Co. (S. C.)	190	190
Piedmont Mfg. Co. (S. C.)	179	182
Poe, F. W. Mfg. Co. (S. C.)	129	135
Raleigh Cotton Mills (N. C.)	105	105
Roanoke Mills (N. C.)	102	102
Saxon Mills (S. C.)	100	103
Sibley Mfg. Co. (Ga.)	65	65
Southern Cotton Mills (N. C.)	90	90
Spartan Mills (S. C.)	132	140
Tucuman Mills (S. C.)	145	145
Union Cotton Mills (S. C.)	145	145
Union Cotton Mills (S. C.) Pfd.	90	90
Victor Mfg. Co. (S. C.)	115	115
Warren Mfg. Co. (S. C.)	100	103
Warren Mfg. Co. (S. C.) Pfd.	105	108
Washington Mills (Va.)	12 1/2	20
Washington Mills (Va.) Pfd.	100	100
Whitney Mfg. Co. (S. C.)	119	119
Wilmington Cot. Mills (N. C.) Pfd.	100	100
Woodruff Cotton Mills (S. C.)	97	100

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The Bank of Onslow has been chartered at Jacksonville, N. C., to do a commercial and savings-bank business, with \$20,000 capital, \$8000 of which has been subscribed. The incorporators are F. W. Hargett, John W. Burton, J. F. Koonce, R. P. Hinton, Charles A. Pettaway, D. J. Sanders, C. H. Hall, W. N. Marine, I. W. Sabiston, Banister L. Kellum, Milton McIntosh, B. F. Cooper, Simon B. Tyson, G. J. McMillan, W. B. Hargett, W. D. Blades, J. V. Grainger, E. M. Koonce, M. M. Capps and Frank Thompson.	
The Printers' Mutual Fire Insurance Co. has been organized at Cuero, Texas, with A. S. Crisp as president; J. C. Howerton, vice-president; W. T. Eicholz, secretary, and C. F. Lehmann, treasurer.	

[For Additional Financial News, See
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